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ABSTRACT

The question of whether or not the level of reading competency has declined over the years, is addressed in this report. The study attempts to determine whether there is sufficient data to answer the question and to decide if the available factual information allows an answer to the question posed. Chapter one, describing the first phase of the study, contains a review of the research on literacy, and chapter two describes and discusses the outcome of the search of the educational literature. Chapter three presents the second phase of the study, a survey of 100 school systems throughout the country, and also reports on data gathered from the individual states. The data are presented in both narrative and tabular form. The major conclusion reached in the study is that it is extremely difficult for anyone interested in evaluating trends in literacy to obtain adequate data. (RB)

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READING ACHIEVEMENT
IN THE
UNITED STATES
THEN AND NOW

Roger Farr
Jaap Tuinman
Indiana University

Michael Rowls
University of South Carolina

Prepared for

Educational Testing Service

as a subcontract under

Contract OEC-71-3715

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and the Institute for Child Study

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John Kuehn and Janet Bullock collected and analyzed much of the data for this report. The authors gratefully acknowledge their assistance.

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Introduction

From time to time one encounters both in the professional and in the popular literature alarming reports about the literacy of the American youth. Rudolf Flesch (1955) achieved instant fame with his "Why Johnny Can't Read" and most recently Vance Packard (1974) has informed millions of readers of his interpretation of the sorry state of affairs in regard to this nation's literacy skills.

How factual, however, are claims that a great many of our youth do not possess adequate literacy skills and, moreover, that the situation is worsening? What kind of data supports these and similar assertions and where are these data to be located?

It is a well known fact that reports of negative and alarming phenomena virtually assure social scientists of reaching a wide and receptive audience. The Coleman report (1966) and the work of Jencks, et. al. (1972) are but two illustrations of this phenomenon. Various speeches and pronouncements by former U.S. Commissioner of Education James Allen (1969) in which he cited "facts" about wide spread illiteracy in this country is another. Seldom has the word of a Commissioner of Education reached so many ears and seldom have they been repeated so widely. In point of fact there is little evidence that Allen's statements were based on any substantial evidence.

To demand factual justification for claims of wide spread and deteriorating illiteracy is far from a trivial plea. Mastery of reading skills is considered to be among the primary goals of schooling by a variety of reference groups: public school people, students, parents and the general public (Shami and Hershkowitz, 1974). Any claims of widespread failure to achieve such mastery quickly threatens to be translated into criticisms of the inadequacy of reading instruction in schools. Subsequently, the danger exists that widely publicized reports about the lack of reading skills of American youth will directly influence important policy decisions at the local, state, and national levels. It is precisely because of the sensitivity of most parents and public officials in regard to "reading" that one must demand factual substantiation for any statement, positive or negative, about the level of reading competency of our youth.

Two different statements, thus far undifferentiated, are typically made:

a) various groups (school children, high school graduates, adults, etc.) do not have adequate reading skills; they are not, in fact, functionally literate;

b) over the years, the level of reading competency of children and adults has declined. A collorary to this charge is as often stated as not: schools do an increasingly poor job of teaching children to read.

Only very recently has explicit attention been paid to the first assertion. To substantiate it factually, not only extensive performance data are required, but also an adequate analysis of what constitutes "sufficient" or "functional" literacy and some sort of consensus in regard to its definition is presupposed. Louis Harris and Associates (1970) conducted a study which apparently established to the satisfaction of many legislators that indeed the level of literacy of Americans was undesirably low. Professional educators and experts in educational measurement, however, tend to be largely unimpressed by the data obtained in this research. More important are the efforts of the National Assessment of Educational Progress (NAEP) to collect and report information about how well children of various ages read. Though the exercises used by NAEP represent somewhat of a consensus definition of what ought to be measured in reading, the interpretations of the results of the first testing cycle is sufficiently troublesome that no clear cut answer as to whether or not children are reading adequately can be based on the NAEP data.

As stated, however, the issue of adequacy of reading skills in terms of life-related performance has only recently been given adequate attention. Little historical perspective is available.

The present report, therefore, will address itself explicitly to the second question. To reiterate briefly: Has the level of reading competency declined over the years? More specifically, this study was an attempt to determine whether a data base is even available to answer this question. Where are the data and does the available factual information allow an answer to the question posed?

Overview of the Study

In this section a general description of data sources is provided. More specific procedural details are included in chapters II, III and IV of this report which describe the various aspects of the study.

Initially, the following potential sources of interpretable data relevant to the major question were identified:

a) Extant research literature in which studies on changes in reading performance were reported.

b) Publishers' records on changes in norms on reading achievement tests.

c) Readability levels of children's books.

d) Records of the Armed Forces.

e) Records of reading achievement data in public school systems.

f) Records of statewide reading achievement data.

g) Census information.

A preliminary analysis of the availability and utility of these sources, however, resulted in the elimination of the following possibilities: re-norming data, readability and Armed Forces achievement data.

There are very few test publishers who publish original and revised norms. Publishers who do have re-norming information available generally maintain quite confidential data files. Even in cases where information on re-norming is available, the comparability of the norming groups employed was so disparate that the possibility of valid conclusions regarding changes in performance over time seemed remote. After a search of technical manuals accompanying major reading achievement tests and exploratory contacts with major test publishers, test re-norming data were abandoned as a source of information for the present study.

Curiously enough, an equally uninformative potential information source was the Department of Defense. Somewhat naively perhaps, it was expected that Department of Defense records would provide data regarding changes in the reading performance of Army inductees through the Army's draft classification tests. A search of Government Documents did not turn up any such records. Direct contacts with various personnel at the Department of Defense were also of no help in locating useable data. The office of Representative John Brademas[1] responded positively to a request for assistance. However, even with this assistance the information was still not secured from any Department of Defense offices.

Though it is possible that further expenditure of time, energy, and money would result in unearthing some relevant Department of Defense data, it was decided that the potential benefit of further exploring this specific source of information would most likely be too small to warrant the effort. It was concluded that if hard data could not be secured after a rather rigorous attempt, most likely such information would also not be generally available to commentators on the "decline of literacy" issue.

Only during the preliminary plans of this study was information on readability of texts and children's books considered as a potential input to our data base. In the original proposal to Educational Testing Service (March 31, 1972) it was stated:

> "No great returns can be expected here, but some studies use subjects to calibrate the difficulty of texts. Thus, the literature may offer some general information related to shifts in readers' performance."

---

[1] John Brademas, U.S. House of Representatives, Republican of Indiana, Member of the Education and Labor Committee and Chairman, Select Subcommittee on Education.

Unfortunately, the low expectations regarding the utility of this source were justified. An exploratory analysis of relevant literature did not result in any information that could be used in establishing positive or negative changes in reading performance over time. No further attention was paid to this potential data source.

Finally, as anticipated, census reports, too, proved to be a "blind alley." The definitions of literacy employed in these reports are too gross to allow any valid inferences about whether or not the reading ability of Americans is deteriorating, and about the scope and nature of any effects, up or down. For example, according to a UNESCO report (1972) literacy in the United States is determined by "...in the United States anyone having attended school for six years is automatically counted as a literate." (p.25). The limitations of such a definition are obvious.

Thus, the data base reported in the remainder of this volume consists of three components.

In Chapter II, the outcome of an extensive search of the educational literature, mainly through the medium of the ERIC/CRIER files will be described and discussed. In addition to the ERIC files such sources as Research in Education, the "Annual Summaries of Reading Research" published in the Reading Research Quarterly and individual bibliographies of relevant reports located through the first three sources mentioned, were searched. Details of this part of the study are provided in Chapter II.

The second phase of the study involved a survey of 100 school systems across the country. This phase is reported in Chapter III. The intent was to first establish whether or not each system contacted had relevant data files on reading achievement over some period of time, and secondly, whether the most pertinent data was accessible via published reports. Initially, it was assumed that visits to selected sites might prove beneficial in terms of obtaining the data needed. It seems, however, that if school systems have gone through the trouble of organizing their achievement data by units larger than the individual classrooms or schools, they generally can make available summary statements in some published form. Where such reports are absent, the data typically has not been summarized. We felt that in these instances it would be extremely inefficient and unwise to attempt to produce data summaries ourselves, particularly since a natural and justifiable reticence exists on the part of school officials to provide access to individual's data files.

For this analysis the primary goal was the collection of data regarding the changes in reading scores over a number of years as reported by the few school systems that were in a position to make such information available. However, in addition, the secondary information in regard to the incidence, scope and nature of achievement testing programs in our school systems is of some interest. The reader should be able to obtain a good 'feel' for how arbitrarily the monitoring of educational quality (as in this case expressed in changes in a reading achievement scores) seems to take place.

Chapter IV reports information similar to that obtained from school systems; however, in this chapter the data is gathered from states rather than local school system. All fifty states were contacted, though actual data is reported for only relatively few of them.

The earlier comment about the apparently incidental execution of the monitoring of reading achievement seems to apply in equal force, or perhaps even more so, to the states. Up to a few years ago few states kept state wide reading achievement records, and even fewer did so with any consistency in terms of grades tested and tests used.

In the case of both the cities and the states, the challenge of getting the questionnaires returned and the data reports submitted seemed relatively minor to the problem of interpreting the data once it was received. However, the collection of the data posed more difficulties than the interpretation.

That is not to say that the problems of interpretation were minor by any means. The major interpretation problems were the obvious difficulties arising both from the longitudinal nature of the data and from the fact that the data had usually been collected in an unsystematic nature and was usually compiled for other than studying longitudinal trends in reading achievement. More often than not, the problems arising from these factors cannot be "solved" in any saitisfactory manner. The best one can do in the face of weak data is to draw weak inferences.

At the conclusion of this Introduction the basic assumption which motivated this study should be re-emphasized. Many claims about changes in the reading competency of American youth are being made.

This study attempted to determine if there existed an adequate data base to make such statements.

This report has two major goals:

a) to make available a much wider data base than typically underlies commentary on shifts in literacy levels and

b) to provide an indication of the scope of the available information.

Chapter I

Review of Research

The literature search for this project was conducted in four phases. The first phase utilized the information retrieval system of the Educational Resources Information Center (ERIC) system. The ERIC system includes published research literature in reading, USOE-sponsored research in reading, recent doctoral dissertations in reading, and International Reading Association conference proceedings.

The first and second basic references used were those including published research in reading from 1950 to 1963 (1,913 citations) and more recent research from 1964 to 1966 (849 citations). The third basic reference included USOE-sponsored research from 1956 to 1965. The fourth basic reference included doctoral dissertations in reading since 1960. The fifth and sixth basic references were those of the IRA (International Reading Association) conference proceedings since 1960 which cover areas of reading research in elementary and secondary reading.

A computer search of the general subject area of reading achievement was then conducted. The ERIC computer search included the following ERIC descriptors:

1. reading ability
2. good readers
3. poor readers
4. early readers
5. reading skills
6. reading progress
7. reading gains

8. as a correlate
9. as a criterion measure
10. as a predictor
11. predictors of
12. factors in
13. as a means of grouping
14. effect on IQ
15. characteristics of different groups
16. reading level
17. reading potential
18. evaluation
19. reading tests
20. standardized tests
21. grading
22. informal inventories
23. cloze procedures

The computer research produced a bibliography of 186 pages that included nearly 1500 entries. These entries spanned the years from 1948 to 1966.

In the second phase of the literature search all the volumes of Research in Education since 1950 were "hand-searched." Research in Education is prepared monthly by the Educational Resources Information Center (ERIC) to make possible the early identification of relevant educational reports. Research in Education is one aspect of the ERIC network which was designed to acquire, select, abstract, index, store, retrieve, and disseminate the most significant and timely educational research. No studies relevant to the present topic were identified by searching the volumes of Research in Education.

The third phase was a hand-search of the annual summaries of reading research published in the Reading Research Quarterly. The Reading Research Quarterly annual summaries review reading-related research from areas such as education, psychology, sociology, library science, communication, medicine, and business. The summaries provide an overview of what the study was about and how it was conducted. One relevant study was identified by this process.

The final phase of the literature search involved a review and analysis of the bibliographies of all the studies identified in the first three phases of the search. Approximately 1500-1600 studies were identified from these phases of the search.

Criteria for Selection. Once the literature search had been completed, the process of identifying relevant studies was begun. To be considered relevant for further analysis a study had only to satisfy two criteria: first, it had to describe the measurement of reading achievement at two points in time; and second, it had to clearly describe the measure of reading achievement used. Only one study that satisfied both these criteria was not included in the final report because of its grossly inadequate measure of reading achievement. Various summaries of related research were also included. Many reports were found that merely discussed the improvement of education and educational achievement and were ruled out because no data of any kind was provided to support the assertions made in the reports. There were approximately fifty studies that were selected for further analysis.

This section of the report is a review of the studies selected for final analysis and has been divided into five subsections: "Early Studies on Trends in General Achievement;"

"Studies on Trends in General Reading Achievement;" "Summaries of Research on Trends in Reading Achievement;" "Discussion of Problems and Variables Related to Studies of Achievement;" "Summary and Concluding Statements." Tables that contain data from individual studies are included.

The first sub-section includes early studies in general achievement. These studies produce no achievement data exclusively for reading ability, but do provide data for general academic achievement from which we may infer reading achievement. The second sub-section describes those studies that address themselves specifically to reading achievement. The third section includes summaries of studies on reading growth. In this section, the interpretation and opinions of the authors of the reviews weigh heavily. Sections IV and V summarize the data and draw conclusions from all of the studies in the first three sections.

I. Early Studies on Trends in General Achievement 1845-1947

The following are descriptions of six early studies in which achievement in academic content areas was studied at two points in time. From these studies we can only tentatively infer a gain or loss in reading achievement. If students in later groups perform better on tests in history, geography, and grammar for example, we can only assume that they are reading better. Six such studies are listed in Tables 1 and 2 , and report test results over a span of one hundred and two years.

TABLE 1
Early Studies on Trends in General Achievement

Author	Location	Population Tested			Tests Used	
		Grade	Begin. Period	End of Period	Begin. Period	End of Period
Caldwell & Courtis (1924)	Boston	8	Best 530 students from total of 1251 grade 8 Boston pupils.	12,000 grade 8 students from all parts of the U.S. unselected from lowest 40% in achievement.	Tests prepared by Boston Survey Committee, 1845	30 questions selected from old exam that were considered valid for 1919 students.
Riley (1908)	Springfield	9	All grade 9 students (245) in Springfield in 1846.	All grade 9 students (709) in Springfield in 1905-1906.	Exams prepared for grade 9 students in 1846.	Same as 1846 test used in 1905-1906.
Luther (1948)	Cleveland	8	35 grade 8 pupils	40 students from 4 schools. 10 were "best" from 4 schools.	High school admission tests used in Cleveland in 1848.	Same as 1848 test used in 1947
Fish (1930)	Boston	8	20 pupils of which 18 passed.	200 pupils; all passed.	High school admission tests used in Boston in 1853.	Same as 1853 test used in 1929.
Rogers (1946)	Chicago	6	16,000 students from Chicago public schools.	13,047 students from Chicago public schools (4 months younger)	Woody-McCall Test in Mixed Fundamentals (Arith.) 1923.	Same as 1923 test used in 1946.
Daughtry (1947)	Florida	4-6	Several counties in Florida.	Several counties in Florida; area somewhat different	Stanford Achievement Test, Form 5, 1929.	Same as 1929 test used in 1947.

TABLE 2
Early Studies on Trends in General Achievement

		Beginning of Period		End of Period		End of Period Gain or Loss + or -
Author	Subject(s) Tested	Date of Testing	Scores M=mean m=median	Scores M=mean m=median	Date of Testing	
Caldwell & Courtis (1924)	Geography History Definitions Philosophy Astronomy Arithmetic Grammar	1845	37.5 m	45.5 m	1919	+
Riley (1908)	Arithmetic Spelling Geography	1846	29.4% M 40.6% M 40.3% M	65.5% M 51.2% M 53.4% M	1905-6	+ + +
Luther (1948)	Mental Arith. Written Arith. Amer. History Grammar Geography Definitions	1848	38.5% M	39.9% M	1947	+
			Errors per pupil			
Fish (1930)	Arithmetic Grammar Geography Total Test	1853	5.4 M 6.5 M 4.4 M 16.2 M	1.6 M 3.1 M 4.2 M 8.9 M	1929	+ + + +
Rogers (1946)	Arithmetic	1923	G.E.=7.3 M	7.1 M	1946	-

TABLE 2

Early Studies on Trends in General Achievement (Cont'd)

Author	Subject(s) Tested	Beginning of Period Date of Testing	 Scores M=mean m=median	End of Period Scores M=mean m=median	 Date of Testing	End of Period Gain or Loss + or -
Daughtry (1947)	Arith. (Gr. 4)	1929	G.E.=4.3 m	G.E.=4.8 m	1947	+
	Arith. (Gr. 5)		G.E.=4.9 m	G.E.=5.5 m		+
	Arith. (Gr. 6)		G.E.=5.9 m	G.E.=7.0 m		+
	Spelling (Gr. 4)		G.E.=4.1 m	G.E.=4.4 m		+
	Spelling (Gr. 5)		G.E.=5.0 m	G.E.=4.9 m		-
	Spelling (Gr. 6)		G.E.=6.0 m	G.E.=6.7 m		+

Caldwell and Courtis (1924) report median test results in seven academic content areas for the years 1845 and 1919. Selection procedures were somewhat novel for this study in that the best 530 eighth graders in Boston in 1845 were chosen from a total of 1251 students, to be tested for possible high school admission. The rationale behind choosing 12,000 eighth graders from "all parts of the United States" for the 1919 comparative group is somewhat fuzzy. No standardized tests were utilized in this study; tests constructed by the Boston Survey Committee were used. Interestingly, in this early study, the same test was not administered to both groups. Thirty selected questions from the original 1845 exam that were considered valid for the 1919 group were used. Caldwell and Courtis report a rather substantial average gain for the 1919 group when compared to the performance of the 1845 group on the same items.

In 1905-1906, Riley (1908) administered the same tests to all grade nine pupils (709) in Springfield, Massachusetts that were administered to all grade nine pupils (245) in the same city in 1846. Riley also reported substantial mean gains in terms of percentages correct for the later group in arithmetic, spelling, and geography. The largest gain was in arithmetic with lesser but undoubtedly satistically significant gains in the other areas. However, Riley did not apply any statistical analysis to his data.

Luther (1948) grouped measures of six content areas into one reported score for 35 grade eight Cleveland pupils in 1848 and 40 pupils from four Cleveland schools in 1947. He used the same high school admission test with both groups, but since the test was for high school admission, the equivalency for the two groups is questionable. Luther reported a slight gain for the later group.

Fish (1930) compared the arithmetic, grammar, geography, and total test performance of 20 eighth graders in 1853 and 200 eighth graders in 1929 from the Boston area. Like Luther, Fish utilized the Boston high school admission test. Eighteen of the original 20 passed the test, while all 200 from the later group passed. Fish reported gains in all three content areas for the later group.

Rogers (1946) is the only one of the six authors in this section who reports a measure in only one content area: arithmetic. The correlation between arithmetic and reading achievement is not as substantial as the correlation between a subject like history and reading achievement, so we are limited in how much we can infer from a measure of arithmetic achievement alone. Rogers compared the 1923 performance of 16,000 Chicago sixth graders on the Woody-McCall Test to that of 13,047 Chicago sixth graders in 1946. He reported a loss in mean grade equivalent from 7.3 for the early group to 7.1 for the latter group. He mentions the fact that the sixth graders in the latter group were on the average four months younger than the early group but does not seem to take this into account in his conclusion.

Finally, Daughtry (1947) compared measures of arithmetic and spelling between fourth, fifth, and sixth graders of 1929 and 1947 in several counties in Florida. Utilizing the Stanford Achievement Test, Form 5, she reports gains in each of the six measures except fifth grade spelling. Daughtry's first sample came from several counties in Florida while her second sample utilized two counties not included in the first sample.

A total of sixteen measures of various academic achievement were obtained by six authors mentioned above. Fourteen of these measures reported gains, while losses in achievement occurred on only two of the measures. For these studies, the range of subjects as well as geographical locations is limited. The studies deal primarily with upper grade children from the larger cities, many of whom are tested for the sole purpose of high school admission. In addition, few of the authors seemed aware of methodological problems peculiar to "then and now" kinds of studies. In general, these early studies seem to indicate an upward trend in achievement.

II. Studies on Trends in Reading Achievement 1921-1963

The following are descriptions of thirteen individual studies that provide assessments of gains or losses in reading

TABLE 3
Studies on Trends in Reading Achievement

Author	Location	Grade	Population Tested		Tests Used	
			Begin Period	End of Period	Begin Period	End of Period
Boss (1940)	St. Louis	1-8	8923 St. Louis public school pupils	A "measured sample" of 1156 pupils from Boston schools	Tests of oral and silent reading used by Judd in 1916. Silent reading test measured usual comprehension ability	Same tests, 1938
Woods (1935)	Los Angeles	6	Grade 6 pupils in 33 elementary schools in L.A.	Same grade in same 33 L.A. schools	New Stanford Tests in Reading, 1923-24.	Same tests, 1933-34.
Worcester and Kline (1947)	Lincoln, Nebraska	3-8	5690 students in grades 3-8 in Lincoln, Nebraska	5106 students in same grades in Lincoln	Monroe Standard Silent Reading Tests, 1921	Same tests, 1947
Davis and Morgan (1955)	Santa Monica	6	Grade 6 Santa Monica public school children, 1927	Grade 6, 1938 "Counter Parts"	Identical tests used, 1927	Identical tests used, 1939
Krugman and Wrightstone (1945)	New York City	6-9 & 11	New York City public school students in grades 6, 8, 9, and 11 in 1935-41 Over 290,000 scores utilized	New York City public school students in grades 6-9 and 11 in 1944-46 Over 242,000 scores utilized	Stanford Reading Test in Grades 6-8; Nelson and Nelson-Denny in Grades 9 and 11	Same tests in 1944-46; (all 9th and 11th graders used Nelson-Denny)

TABLE 3
Studies on Trends in Reading Achievement (Cont'd)

			Population Tested		Tests Used	
Author	Location	Grade	Begin Period	End of Period	Begin Period	End of Period
Tiegs (1949)	6 communities in 7 states	4-11	230,000 pupils, half before 1945	230,000 pupils, half after 1945	Stanford and Progressive Achievement Tests before 1945	Same tests after 1945
Finch and Gillenwater (1949)	Springfield, Missouri	6	144 Grade 6 students in six Springfield public schools	198 Grade 6 students in same six schools	Thorndike-McCall Reading Scale, Form 3: 1931	Same test, 1948
Burke and Anderson (1953)	Ottawa, Kansas	1-6	162 pupils from total school population of 300, none with kindergarten	216 pupils from total school population of 300, most having had kindergarten	Metropolitan Achievement Test, 1939	Same test, different form. (Changed norms allowed for) 1950
Miller and Lanton (1956)	Evanston, Illinois	3-5 + 8	4th grade 1932 3 + 5th grade 1934	4th grade 1952 3 + 5th grade 1953	New Standard Achievement Tests with 4th, 8th; Metropolitan Achievement Tests with 3rd and 5th (varying forms were used)	Same tests and forms
Partlow (1955)	Canada	5-8	All pupils in city of St. Catharines in 1933. Total tested = 2513	All pupils in city of St. Catharines in 1953. Total tested = 3018	Thorndike-McCall Reading Scale and Dominion Group Achievement Test, Forms A & B, + Vocabulary Tests 1933	Identical tests used in 1953

TABLE 3
Studies on Trends in Reading Achievement (Cont'd)

			Population Tested		Tests Used	
Author	Location	Grade	Begin Period	End of Period	Begin Period	End of Period
Fridian (1958)	Lafayette, Indiana	1-7	All students (B classes) in one parochial school, 1940	All students (10 classes) in same school, 1956	Gates Reading Tests, 1940	Same tests, 1957
Bradfield (1970)	Rural California	5	35 5th graders from rural town of 1200	51 5th graders from same town of 7,000	Los Angeles Elementary Reading Test Form 1, 1927-8	Same tests, 1963-4
Gates (1961)	Cross section of U.S.	1-6	107,000 pupils grades 1-6 representing a cross section of U.S.	31,000 pupils grades 1-6 representing a cross section of U.S.	The 4 Batteries of Gates Reading Tests, 1937	Same tests, 1957

TABLE 4
Studies on Trends in Reading Achievement

Author	Subjects or Test(s)	Beginning of Period Date of Testing	Beginning of Period Scores M=Mean m=Median	End of Period Scores M=Mean m=Median	Date of Testing	End of Period Gain or Loss + or -
Boss (1940)	Oral Reading Silent Reading	1916	Mean Scores for Grades 1-8 for two terms reported		1938	- -
Woods (1935)	Reading	1923	Gr.=6.0 M	Gr.=6.6 M	1933	+
Worcester and Kline (1947)	Silent Reading	1921	Gr.3=44.55 M	63.13 M	1947	+
			Gr.3=44.34 m	57.69 m		+
			Gr.4=68.11 M	79.11 M		+
			Gr.4=65.29 m	73.28 m		+
			Gr.5=78.92 M	93.11 M		+
			Gr.5=76.47 m	90.13 m		+
			Gr.6=78.43 M	93.79 M		+
			Gr.6=79.69 m	91.96 m		+
			Gr.7=90.46 M	95.60 M		+
			Gr.7=89.50 m	94.01 m		+
			Gr.8=90.39 M	96.48 M		+
			Gr.8=89.19 m	92.92 m		+
Davis and Morgan (1955)	Reading	1927	Grade equivalents--two months gain at end of period		1939	+
Krugman and Wrightstone (1945)	Reading	1935-1941	Scores reported as above or below norms in months		1944-1947	+ (not significant)

TABLE 4
Studies on Trends in Reading Achievement (Cont'd)

Author	Subject or Test(s)	Beginning of Period Date of Testing	Beginning of Period Scores M=Mean m=Median	End of Period Scores M=Mean m=Median	End of Period Date of Testing	End of Period Gain or Loss + or -
Tiegs (1949)	Reading Vocabulary	Before 1945	Gr.=-.10 m -.01 M	Only differences in scores for periods reported. In grade equivalents.	After 1945	-
	Reading Comprehension		Gr.=+.13 m +.10 M			+
	Total Reading Achievement		Gr.=+.07 m +.15 M			+
Finch and Gillenwater (1949)	Reading	1931	22.54 M	23.32 M	1948	+
Burke and Anderson (1953)	Reading (and 5 other subjects)	1939	Scores reported in M grade equivalents		1950	No difference
Miller and Lanton (1956)	3rd Grade:					
	Reading Completion	1934	Gr.=3.42 M	Gr.=3.64 M	1953	+
	Paragraph Meaning		Gr.=3.39 M	Gr.=3.65 M		+
	Vocabulary		Gr.=3.14 M	Gr.=3.52 M		+
	4th Grade:					
	Reading Comprehension	1932	Gr.=4.6 m	Gr.= 5.2 m	1952	+
	Vocabulary		Gr.=4.6 m	Gr.= 5.4 m		+
	5th Grade:					
	Reading Comprehension	1934	Gr.=5.73 M	Gr.=5.97 M	1953	+
	Vocabulary		Gr.=6.01 M	Gr.=6.29 M		+

TABLE 4
Studies on Trends in Reading Achievement (Cont'd)

Author	Subject or Test(s)	Beginning of Period Date of Testing	Beginning of Period Scores M=Mean m=Median	End of Period Scores M=Mean m=Median	End of Period Date of Testing	End of Period Gain or Loss + or -
	8th Grade:					
	Reading Comprehension	1933	Gr.=9.2 M	Gr.=9.7 M	1954	+
	Vocabulary		Gr.=9.0 M	Gr.=9.5 M		+
Partlow (1955)	Reading Comprehension	1933	Gr. 6	m=+4.0	1953	+
			Gr. 8	M=+4.5		+
			Gr. 6	M=no change		no difference
	Reading Vocabulary	1933	Gr. 5	m=+1.1%	1953	+
			Gr. 6	m=-2.2%		-
			Gr. 7	m=-2.2%		-
			Gr. 8	m=-7.8%		-
			(Significant overall improvement in Reading)			
Fridian (1958)	Reading (Subtests measured word recog., sentence read, para. reading, etc.)	1940	Gr. 1=2.22 M	2.33 M	1956	+
			Gr. 2=2.79 M	3.46 M		+
			Gr. 3=4.28 M	5.91 M		+
			Gr. 4=5.06 M	6.00 M		+
			Gr. 5=5.58 M	6.04 M		+
			Gr. 6=6.75 M	5.90 M		-
			Gr. 7=8.25 M	8.85 M		+
			Subtest scores reported for each grade			
Gates (1961)	Reading	1937	After 5 years in school, today's children achieve a reading level average of 5 months superior to earlier group.		1957	+
Bradfield (1970)	Reading	1927-28	22.94 M	24.67 M	1963-64	+ (not significant)

achievement for groups of children at diffferent times in history.

Boss (1940) compared reading achievement of pupils in grades one through eight in St. Louis for the years 1916 and 1938. Using the test scores obtained by Charles Judd in 1916 in silent and oral reading for 8,928 pupils, Boss utilized the same test with a sample of 1,156 children in 1938. The sample, or cross section of pupils, compared with the 1916 sample in terms of city-wide reading medians. The 1938 sample was chosen on the basis of scores on the *Modern School Achievement Test and the Pressery Third Grade Attainment Scale*.

The 1916 sample surpassed the 1938 sample in oral reading in every grade but grade one. Girls in 1916 were better oral readers than boys, a difference that was even more pronounced in the 1938 sample.

TABLE 5 *

Average Scores** in Oral Reading for the Second and Fourth Quarters, Inclusive, in Each Grade, for 1916 and 1938.

Grade	I	II		III		IV		V		VI		VII		VIII	
quarter	4	2	4	2	4	2	4	2	4	2	4	2	4	2	4
1916	38	39	47	46	50	49	52	49	51	50	51	49	51	48	51
1938	42	29	45	39	47	41	47	44	45	43	45	41	45	40	43

*Table 5 is from Boss, M. E. Reading then and now, *School and Soc*., 51 (1940) p. 63.

**Raw Scores

TABLE 6

Average Scores* in Silent Reading for the Second and Fourth Quarter Sections in Grades II-VIII, Inclusive for 1916 and 1938.

Grade	II		III		IV		V		VI		VII		VIII	
Quarter	2	4	2	4	2	4	2	4	2	4	2	4	2	4
1916	27	37	41	45	31	34	36	38	40	44	28	30	33	34
1938	29	38	44	45	23	29	28	28	32	36	22	24	27	31

*Table 6 is from Boss, M.E. Reading then and now, School and Soc., 51 (1940) p. 64.

In regard to silent reading, Boss states that the "scores made by children in 1916 were higher in general than those made in 1938." Rate of reading scores were very similar, while the 1916 sample scored higher in grades four through eight on comprehension and the 1938 sample outscored the 1916 sample in comprehension in grades two and three. Tables 5 and 6 report Boss' data. She does not tell us however, if these are raw scores or standard scores.

Boss states, "The principal conclusion to be drawn from this investigation is that tests are designed to measure attainment in selected skills or qualities of reading rather than total efficiency. It is impossible, therefore, "to draw any conclusion whatever concerning the total efficiency of reading in 1916 in comparison with the total efficiency of reading in 1938 by using the same tests." She further states that the 1938 scores probably only indicate that educational practice has changed from what it once was.

Boss brings up an interesting point about the tests used in "then and now" studies. If a researcher uses the same test for two groups separated by several years, the test which was originally designed to be used with the earlier population may not be valid for the later population. Differences in language usage and in what is emphasized in school can easily change and render a test invalid for particular groups. Boss, however, made no attempt to correct for this. It is generally accepted that oral reading was not emphasized nearly as much in 1938 as it was in 1916; yet, half of the measurement in Boss' study dealt with oral reading. On the other hand, if a different test or a variation of the original test is used with the later population will the results be valid?

Finally, Boss did not report the chronological ages for her subjects. This may well account for the negative change in reading achievement that Boss found. Changing attendance laws and requirements as well as changing promotional policies in the schools made the fifth grader of 1938 somewhat younger than his counterpart of 1916.

Krugman and Wrightstone (1945) attempted to compare reading achievement in the New York City schools for the period 1935-1941 and 1944-1946, both before and after the adoption of the new "activity program." Krugman and Wrightstone base their conclusions on data from children in a wide range of grade levels. They utilized nearly half a million scores on the Stanford Reading Tests in grades six through eight and on the Nelson and Nelson Denny reading tests in grades nine and eleven. Their data are reported in Tables 7 and 8.

TABLE 7

New York City Academic High School Reading Test Results in Comparison with National Norms*

Date	Number	Results
	9th Grade	
1938	20,467	1 month above
1947	13,702	4 months above
	11th Grade	
1940	29,319	2 months above
1947	21,252	1 month above

*Table 7 is from Krugman, Judith and Wrightstone, J. W. Reading: then and now, Highpoints, 30 (April, 1945), p. 60.

We are given practically no information about the subjects, but from the magnitude of the sample we can assume that most of the New York City school children were involved. Again, the authors say very little about limitations of "then and now" studies. They make no mention of the postwar exodus to suburbia which changed, to a great extent, the socioeconomic makeup of New York City school populations. Possible differences in age and grade status of

TABLE 8

STANFORD READING TEST RESULTS IN TERMS OF COMPARISONS WITH NATIONAL NORMS

		6th Grade		7th Grade		8th Grade	
Period	Year	No.	Results	No.	Results	No.	Results
Before Adoption of Activity Program	1935	21,850	1 mo. below	n.d.a.*	n.d.a.	n.d.a.	n.d.a.
	1938	46,893	2 mo. above	n.d.a.	n.d.a.	21,723	1 mo. above
	1939	38,684	1 mo. above	n.d.a.	n.d.a.	24,225	1 mo. above
	1940	37,377	1 mo. above	n.d.a.	n.d.a.	n.d.a.	n.d.a.
	1941	78,547	0.6 mo. above	n.d.a.	n.d.a.	22,146	1 mo. above
After Adoption of Activity Program	1944	62,442	0.4 mo. above	19,040	1 mo. above	34,755	1.6 mo. above
	1945	n.d.a.	n.d.a.	32,460	1.4 mo. below	32,387	0.1 mo. above
	1946	n.d.a.	n.d.a.	31,382	1.1 mo. above	29,951	1.6 mo. above

* no data available

populations that were compared are not mentioned. Stricter attendance requirements are not taken into account. And we will never know the effect of the interruptions of World War II.

Nevertheless, Krugman and Wrightstone offer some concluding statements:

> Certainly there is no evidence in these results to substantiate the claim that reading has become poorer. Nor can we state that the reading level has improved. Though averages do not by any means give a full picture, they do at least reflect general trends and the trend here shows that the reading level has remained about the same, that it has fluctuated close to the national norm, tending generally to be slightly above the norm. (p. 59)

Tiegs (1949) conducted a study in which he collected data for over 230,000 subjects. These subjects came from sixty communities in seven states--New York, Pennsylvania, Delaware, Wisconsin, Michigan, Oregon, and California. Data was collected from the Stanford Achievement Tests and the Progress Achievement Tests. Tiegs reports the data in a series of six tables which deal with:

1. Reading Vocabulary and Comprehension
2. Arithmetic Reasoning and Fundamentals
3. Language Achievement
4. Total Achievement
5. Total Reading Achievement
6. Total Arithmetic Achievement

Tiegs admits that he "might have used a theoretically better method of sampling," but states that in terms of difficulties ex-

Table 9

COMPARISON OF READING VOCABULARY AND READING COMPREHENSION ACHIEVEMENT BEFORE AND AFTER 1945 ON THE PROGRESSIVE ACHIEVEMENT AND STANFORD ACHIEVEMENT TESTS

Before 1945 N	After 1945 N	Before 1945	After 1945	Dif-ference	Before 1945	After 1945	Dif-ference
		Read. vocab. grade place.	Read. vocab. grade place.		Read. vocab. grade place.	Read. vocab. grade place.	
1	2	3	4	5	6	7	8
2,211	2,289 B4	4.26	4.65	+.39	4.78	4.85	+.07
1,865	280 A4	5.11	4.65	-.46	5.10	5.55	+.45
2,234	2,307 B5	5.85	5.68	-.17	5.97	5.83	+.09
2,463	1,950 A5	6.11	5.75	-.36	5.85	6.00	+.15
525	730 B6	6.79	6.45	-.34	6.80	6.68	-.12
1,875	2,440 A6	6.97	6.15	-.82	6.53	6.40	-.13
11,173	9,996						
		Median		-.35	Median		+.08
		Weighted Mean		-.26	Weighted Mean		+.08
5,075	14,526 B7	7.34	7.25	-.09	7.30	7.19	-.11
800	800 A7	8.55	8.45	-.10	8.25	8.45	+.20
4,399	16,934 B8	8.03	8.10	+.07	7.87	7.96	+.09
854	828 A8	9.05	9.55	+.50	9.30	9.80	+.50
381	2,050 B9	9.59	9.25	-.34	9.73	9.95	+.22
11,509	35,138						
		Median		-.10	Median		+.20
		Weighted Mean		-.01	Weighted Mean		+.03
1,000	825 B10	10.15	10.15	.00	9.95	9.85	-.10
189	1,700 B11	11.05	11.45	+.40	10.85	11.35	+.50
1,000	10,203 A11	11.25	11.65	+.40	10.75	11.15	+.40

2,189	12,728				
		Median	+.40	Median	+.40
		Weighted Mean	+.35	Weighted Mean	+.35
24,871	57,862				
NET TOTAL					
82,733		Median of Total	-.10	Median of Total	+.13
		Weighted Mean of Total	-.01	Weidhted Mean of Total	+.10

Table 9 is from: Tiegs, Ernest W. A comparison of pupil achievement in the basic skills before and after 1945, Growing Points in Educational Research. Official Report of 1959 Meeting, Washington, D.C.: AERA, A Department of the NEA, 1949. P. 52.

Table 10

COMPARISON OF TOTAL ACHIEVEMENT BEFORE AND AFTER 1945 ON THE PROGRESSIVE ACHIEVEMENT AND STANFORD ACHIEVEMENT TESTS

Before 1945 N	After 1945 N	Before 1945	After 1945	Difference
		Total grade place.	Total grade place.	
1	2	3	4	5
43	37 B3	3.75	3.65	-.1
500	500 A3	3.9	3.9	0
543	537			
			Median	-.05
			Weighted Mean	-.01
2,211	2,289 B4	4.38	4.60	+.22
2,365	780 A4	5.01	5.02	+.01
2,181	2,222 B5	5.56	5.75	+.19
2,963	2,450 A5	5.88	5.82	-.06
448	602 B6	5.89	5.95	+.06
2,128	2,280 A6	6.96	6.68	-.28
12,296	10,623			
			Median	+.04
			Weighted Mean	+.02
3,798	5,630 B7	7.01	7.08	+.07
1,300	1,300 A7	7.76	7.98	+.22
3,328	5,600 B8	7.81	8.12	+.31
1,354	1,328 A8	9.01	9.28	+.27
381	2,050 B9	9.88	9.75	-.13
10,161	15,908			
			Median	+.22
			Weighted Mean	+.15
189	1,700 B11	10.45	12.15	+1.7
23,189	28,768			
NET TOTAL 51,957			Median	+.07
			Weighted Mean	+.15

Table 10 is from: Tiegs, Ernest W. A comparison of pupil achievement in the basic skills before and after 1945, Growing Points in Educational Research. Official Report of 1949 Meeting, Washington, D. C.: AERA, A Department of the NEA, 1949. P. 55.

Table 11

COMPARISON OF TOTAL READING ACHIEVEMENT BEFORE AND AFTER 1945 ON THE PROGRESSIVE ACHIEVEMENT AND STANFORD ACHIEVEMENT TESTS

Before 1945 N	After 1945 N	Before 1945 Total grade place.	After 1945 Total grade place.	Difference
1	2	3	4	5
1,748	1,925 B3	3.26	3.32	+.06
954	1,048 B4	4.57	4.55	-.02
3,154	3,736 A4	5.56	5.50	-.06
815	1,062 B5	5.94	5.93	-.01
872	1,037 B6	6.60	6.70	+.10
34,700	27,337 A6	6.70	6.80	+.1
40,495	34,220			
			Median	-.01
			Weidhted Mean	+.08
6,658	5,115 A7	6.20	6.90	+.7
880	880 A8	7.69	7.69	0
7,538	5,915			
			Median	+.35
			Weighted Mean	+.61
2,570	2,613 B10	8.93	9.57	+.64
250	266 B11	10.75	10.75	0
2,820	2,879			
			Median	+.35
			Weighted Mean	+.58
52,601	44,939			
NET TOTAL 97,540			Median	+.0
			Weighted Mean	+.18

Table 11 is from: Tiegs, Ernest W. A comparison of pupil achievement in the basic skills before and after 1945, Growing Points in Educational Research. Official Report of 1949 Meeting, Washington, D.C.: AERA, A Department of the NEA, 1949, P. 56.

perienced by sampling experts, his results are possibly as valid as they would be using any other sampling techniques.

Limiting ourselves to reading achievement and measures of total achievement, three of Tieg's tables are of use. Table 9 shows, in 82,733 cases, an overall gain in reading comprehension of one month and an overall loss in vocabulary of one-tenth of a month. Table 10 indicates an overall gain of 1.5 months in total achievements. Lastly, Table 11 reports an overall gain of 1.8 months in reading for 97,540 subjects that were not utilized in Tables 9 through 10 . Tiegs summarizes, "It is safe to conclude that the achievement of public school pupils is not falling; in fact, the data show a slight, although probably not statistically significant, gain in achievement."

The major limitation of this investigation is its lack of specificity in regard to the years testing was accomplished. We know only that testing was done before and after 1945--but how much before? And how much after? Is Tiegs talking about a twenty-year span, a two-year span, or something in between? Without this information, any discussion of some of the other methodological problems that plague "then and now" studies is somewhat irrelevant. We cannot hypothesize possible differences in age or grade status; we cannot question changes in socioeconomic makeup of the schools; we cannot gain any information via a critical examination of the validity of the tests used.

Finch and Gillenwater (1949) utilized the test results of 144 Springfield, Missouri sixth graders in 1931 and 198 comparable subjects in 1948. The Thorndike-McCall Reading Scale, Form 3 was used with both groups. The test, itself, state the authors, "had been designed especially to measure pupil's ability to understand meaning of words, sentences and paragraphs." The test puts a premium on comprehension and has a "high upper limit of difficulty."

Finch and Gillenwater, more than many other authors, attempted to take into account factors that might influence the results. They report chronological ages for both groups in median months and conclude that the 1931 group was 1.56 months older than the 1948 group. They consider transfers from other schools that might easily affect any conclusions concerning reading achievement in Springfield and report the percentage of children born in Springfield, in Missouri, outside Missouri, and other unknown places. In addition, they consider the occupations of the subjects' fathers for a determination of change in socioeconomic status of the subjects. There was little difference between the two groups as a result of comparing occupational classifications, or in regard to the other variables. The authors conclude that even "test-wiseness" probably could not have contributed to any gains reported, since, after searching school records, they concluded that the 1931 group was as familiar with objective tests as the 1948 group.

As reported in the accompanying tables, the mean score for the 1931 group was 22.54 while 23.32 was the mean for the 1948 group.

The standard deviation for the 1931 group was 4.02 while for the 1948 group it was 6.32. Since Finch and Gillenwater do not report any kind of statistical analysis of their data, project personnel performed a t-test for differences in means between the mean for the 1931 group and the mean for the 1948 group. Differences were not statistically significant. Finch and Gillenwater conclude that "the resulting scores of the two groups of pupils show that in the schools being studied the average sixth grader of 1948 is a slightly better reader than the average sixth grader of 1931." This difference is "reasonably good evidence that the teaching of reading in Springfield is now more successful in producing the outcomes we have measured than it was seventeen years ago."

Perhaps the major limitation of this study is the size of the experimental populations. Granted, a study that took into account as many variables as this one did *and* utilized a considerably larger sample would be a major undertaking. But we are limited in how much we can generalize from such a small sample. The only other consideration is that of the validity of the test for the 1948 group.

Burke and Anderson (1953) studied the achievement of pupils in grades one through six in Ottawa, Kansas. They compared the achievement of 162 pupils in 1939 with that of 216 pupils in 1950 on the *Metropolitan Achievement Tests*. Burke and Anderson obtained scores in reading, arithmetic, spelling, English, history, and geography.

For both samples, Burke and Anderson looked at the subjects' backgrounds and concluded that subjects in both groups "were from homes of the laboring class of people as well as from the middle class of people." Perhaps the greatest difference between the two groups, according to the experimenters, was the lack of kindergarten experience for the 1939 group. Total school population and city population remained approximately the same for the two groups. Different forms of the Metropolitan Achievement Tests were used for the two groups. All scores were recorded in grade equivalents and reported in mean grade equivalents.

The study concluded that there was no "significant difference in mean grade equivalents for the test results in: (1) arithmetic, spelling and reading for grade two, (2) reading for grade three, (3) English and spelling for grade four, (4) reading, English and spelling for grade five, and (5) history and geography for grade six." The 1939 group attained a higher level of achievement than the 1950 group in (1) numbers and reading for grade one; (2) arithmetic for grade three; (3) literature for grade five; and (4) arithmetic and literature for grade six. The 1950 group attained a higher level of achievement than the 1939 group in (1) reading for grade four; and history and geography for grade five. Thirteen comparisons made between two groups showed no significant differences in mean grade equivalents. Eleven comparisons revealed significant differences in favor of the 1939 group, while only three comparisons showed significant differences in favor of the 1950 group. The authors' final conclusions, however, held that there was very little difference between the two groups.

While Burke and Anderson did attempt to consider some of the variables that affect "then and now" studies, their conclusions are somewhat confusing. They conclude that there was no significant difference between the 1939 and 1950 groups, but their data seem to indicate that the 1939 group had a slightly higher level of achievement than the 1950 group.

Miller and Lanton (1956) studied the reading achievement of a total of 1,828 children in Evanston, Illinois. Their subjects included fourth graders for the years 1932 and 1952; third and fifth graders for the years 1934 and 1953, and eighth graders for the years 1933 and 1954. The authors state that "the population has remained relatively stable during the last twenty-five years. The area contains a cross section of people of different races and of varied social and economic status."

The authors utilized the 1929 edition of the New Stanford Achievement Test for the fourth grade study; two levels of the 1933 edition of the Metropolitan Achievement Tests were selected for the third and fifth grade study, and the eighth graders were tested with the 1933 Stanford Achievement Test.

Although these tests were out of print, exact copies of the original tests were obtained with the permission of the World Book Company. Tables are included with the study that report test scores and subtest scores, as well as chronological age, IQ, and grade equivalents.

Third graders were tested for reading completion, paragraph meaning, and vocabulary. In each instance, the mean grade equivalents of the 1953 group exceeded those of the 1934 group. Fourth, fifth, and eighth graders were tested in reading comprehension and vocabulary. In each instance, the scores of the later groups exceeded the scores of the earlier groups. See Tables 3 and 4.

Partlow (1955) studied both reading and arithmetic achievement in an effort to ascertain the effectiveness of education in Canada. Partlow concentrated his research in the city of St. Catharines. All pupils in grades five through eight (2,513) had been tested in reading comprehension and reading vocabulary in 1933. In 1953, Partlow repeated the procedure and tested all fifth through eighth graders in the city (3,018) with the same test instruments.

Partlow utilized the Thorndike-McCall Reading Scale for the Understanding of Sentences (1920 ed.), Form 2; The Dominion Group Achievement Test, Part I, Paragraph Reading, Grade Eight, Forms A and B, and unnamed tests of general vocabulary. He found an increase in reading comprehension, but results were much more varied in vocabulary. He concluded from the data that:

> The total evidence reveals clearly that there was no decline in Reading standards in St. Catharines Public Schools, but rather that there was a significant over-all improvement at the end of the period.

Fridian (1958) compared reading test results at the same school for the years 1940 and 1956. Her subjects consisted of all students, grades one through seven, at the St. Boniface parochial school in Lafayette, Indiana. Fridian utilized the Gates Reading Tests for her study. For grade one, scores are reported for word recognition, sentence reading, paragraph reading, average reading, and range. For grade two the same information is reported except for scores in sentence reading. For grades three through seven scores are reported for appreciating significance, predicting outcomes, understanding directions, noting details, average reading, and range. In seven measures of average reading across the seven grades, the 1956 students achieved higher scores except for those in the sixth grade. The author states that the "conclusion is warranted that the pupils of the school investigated in 1956 read better than the pupils enrolled in the same school in 1940." She goes on to say that "we may conclude that the teaching of reading in the school is more effective now than it was in 1940 since the difference in intelligence between the groups was non-significant (p. 405)."

The major weaknesses in this study pertain to the lack of information about the subjects and the tests utilized. Fridian does not tell us anything about the socioeconomic background of the students in the study nor does she report the total number of students involved.

Gates (1961), in the process of renorming the four batteries of the Gates Reading Test, studied reading achievement over a twenty-year period. In 1937, 107,000 children were tested in order to compute norms for his series of reading tests. With better and more accurate sampling procedures, Gates tested only 31,000 children in 1957 for purposes of computing new norms for the tests. "At both times," says Gates, "the pupils tested as the 'standardized population' were selected to be geographically, economically, intellectually, and educationally representative of the U.S. at large (p. 49)." Gates' data are reported in Tables 13 and 14 .

In comparing grades, it was observed that between grades two and six, the 1937 children "demonstrated more advanced reading abilities than did the comparable 1957 children (p. 3)." But Gates found that there was a large discrepancy between the two groups in chronological age. When the two groups were compared by chronological age, the 1957 children were superior in reading ability. See Table 12 .

TABLE 12

Average Age, in Years, and Months, of the 1957 and 1937 Standardization pupils at Specified Grade Positions

Grade Position	Age of Pupils	
	1957	1937
3.0	8-2	8-6
3.5	8-8	9-0
4.0	9-2	9-8
4.5	9-8	10-3
5.0	10-2	10-10
5.5	10-7	11-4
6.0	11-2	11-10
6.5	11-9	12-3
7.0	12-3	12-9
7.5	12-10	13-3
8.0	13-4	13-9
8.5	13-9	14-3
9.0	14-3	14-9

Table 13

AMOUNTS BY WHICH READING AGE OF 1957 PUPILS EXCEEDED READING AGE OF 1937 PUPILS OF THE SAME AGE AT VARIOUS GRADE POSITIONS (EXPRESSED IN MONTHS)

Grade Position*	Basic General Significance	Survey Speed	Basic Note Details	Survey Level of Comprehension	Survey Reading Vocabulary	Basic Understanding and Executive Directions	Mean
4.0	2.25	2.0	4.5	7.5	7.0	7.0	5.0
4.5	2.5	2.5	4.5	6.0	7.0	8.0	5.1
5.0	3.0	4.0	4.5	6.0	6.0	10.5	5.7
5.5	4.0	5.5	5.0	6.5	7.0	12.0	6.7
6.0	3.0	4.5	3.75	5.0	6.0	10.0	5.4
6.5	2.0	3.75	0.0	5.0	5.0	8.0	4.0
Mean	2.79	3.71	3.71	6.0	6.33	9.3	5.3

* On basis of records for 1957 pupils.

Table 13 is from: Gates, Arthur I. *Attainment in elementary schools: 1957 and 1937*. New York: Columbia University Teachers College, Bureau of Publications (1961), P. 24.

Table 14

AMOUNTS BY WHICH READING GRADES OF 1937 PUPILS AT A PARTICULAR GRADE LEVEL EXCEEDED READING GRADES OF 1957 PUPILS (EXPRESSED IN TENTHS OF READING GRADE)

Grade Position*	Basic General Significance	Survey Speed	Basic Note Details	Survey Level of Comprehension	Survey Reading Vocabulary	Basic Understanding and Executive Directions	Mean
3.5	0.2	0.1	0.05	0.04	0.0	-.01*	0.07
4.0	0.25	0.15	0.1	0.05	0.1	-0.12	0.09
4.5	0.3	0.2	0.15	0.05	0.11	-0.14	0.11
5.0	0.35	0.24	0.2	0.1	0.12	-0.17	0.14
5.5	0.4	0.28	0.3	0.15	0.14	-0.2	0.18
6.0	0.4	0.29	0.4	0.2	0.16	-0.2	0.21
6.5	0.4	0.30	0.5	0.2	0.18	-0.15	0.24
6.9	0.45	0.30	0.4	0.25	0.2	-0.1	0.25
7.5	0.5	0.33	0.4	0.3	0.25	-0.1	0.28
8.5	0.65	0.36	0.3	0.45	0.38	-0.1	0.34

* The minus sign means that 1957 pupils were superior.

Table 14 is from: Gates, Arthur I. *Attainment in elementary schools: 1957 and 1937*. New York: Columbia University Teachers College, Bureau of Publications (1961), P. 25.

Gates concludes:

> In this writer's view, a conservative estimate is that today's children achieve, after five years attendance in elementary schools, a level of reading ability that is better than a half year in advance of pupils of equivalent intelligence, age, and other related factors twenty years ago." (p. 50)

This statement, at least in light of statements by researchers doing similar research, is bold indeed. This marks the first study in which an author has attempted to place any kind of grade level value on the upward trend in reading achievement.

Bradfield (1970) studied the reading achievement of 86 fifth graders from a rural elementary school in a California farming community for the years 1927-1928 and 1963-1964. He attempted to analyze the change in the community, and thereby the change in experimental samples from one time period to the next. He analyzed fathers' occupations for the two groups (according to Havighurst's model) and found a slight increase in the upper-middle class socio-economic group and a decrease in the upper-lower-middle class group from 1927 to 1964. But for the most part, differences in socio-economic levels were negligible.

Bradfield utilized the Los Angeles Elementary Reading Test, Form I, which was still available at the time of his study. The mean score for the earlier group was 22.94 while for the latter group it was 24.67. The author states that "the statistical analysis indicates no significant difference between the two groups in reading achievement." Bradfield draws no real conclusions from the study on the basis that "drawing specific conclusions from studies of this nature may well lead to the error of implying simple factual evidence to data, which are in reality highly complex." In truth, one would be wise to draw no specific conclusions from this study simply on the basis of the inadequacy of the size of the two groups.

III. Summaries of Research on Trends in Reading Achievement

Another source of information concerning the effectiveness of reading instruction and the status of reading achievement is summaries of related research. Often, education professionals, well-known for their work in specific areas, will compile a review of research on a given topic. The information they report, as well as their conclusions concerning their review, are important. Five such summaries were obtained from the literature search, four of which are described in this section. All "then and now" studies of reading achievement reviewed in these summaries have been described previously in this paper.

The authors of these reviews seemed to be motivated to review the research in light of extensive criticism being leveled at the educational system in this country. Witty and Coomer (1951) cite ample data from the seven studies they review to support the assertion that reading achievement is increasing. They mention the fact that in 1915, for example, only 71 per cent of the students who took the New York Regent's Examination were successful, while in 1947, 84 per cent of the students taking the exam passed.

An interesting aspect of this review is its reporting of a survey taken in the summer of 1947 which was repeated again in 1959. In all, 500 teachers, administrators, and supervisors attending summer conferences were asked to state whether they believed that reading ability in our schools was equal, superior, or inferior to that of pupils five, ten, or fifteen years ago. From a total of 500 responses of educators with five or more years experience, 80 per cent "concurred in indicating that the reading ability of students at the present time is equal or superior to that of students five or more years ago." (p. 455) The authors, themselves, conclude their article by stating that based on their review of the literature, "instruction is as successful today as it was at any period in the past." (p. 457)

The National Education Association (1951) published a report entitled "The Three R's Hold Their Own at the Mid-century." The purpose of this study was to assemble and report results of standardized testing programs conducted in city schools during the previous thirty years. A great deal of data is presented in the report in table form. However, the report stresses that the interpretations and conclusions reached are only general.

Briefly, the three major conclusions of the report are:

1. The general impression derived from these reports is that present day pupils for the most part equal, and often excel the achievement of pupils in similar grades in the past.

2. Changes in the average intelligence of high-school pupils from about 1920 to date (1950) show no definite trend upward or downward, according to data available.

3. Comparisons over a period of years show that the more recent groups have slightly greater average ability than did the earlier groups. This increase in average ability holds true in spite of the increased enrollment in high schools which tends to bring into schools a larger proportion of students in the lower ability range.

Another National Education Association report entitled "Comparative Achievement of Pupils Today and Yesterday," (1952) deals with general educational achievement. This report reviews four studies that have been previously reviewed in this publication. In addition, the paper cites research that involves subjects as far back as 1890. Much of the research supports the idea that pupils today are not inferior in intelligence or achievement to those of an earlier period. In fact, much of the research notes trends in the opposite direction. One of the reviews included in the NEA report is Leonard and Eurich's (1942) summary of 154 studies. Their study evaluated newer educational programs in comparison to older, more conventional programs. It was found that "pupils trained by newer-type methods achieved as much or more in basic skills and knowledge and did it in less time than pupils trained by conventional methods (p.12)."

The NEA report also reviewed Tilton's study of Army achievement test scores. Tilton compared achievement test scores of men in the army during World War I to those of World War II inductees.

In twenty-five years after World War I, the median score for World War I men became the lower quartile for World War II men.

In the conclusion to the NEA study, the authors describe what they feel is a limitation of this type of study, that is, that tests were prepared for students who were much different than the later groups tested, and further that the tests did not reflect changes in curriculum or methods of teaching. Today's children, according to these authors, are thus at a disadvantage. The report goes on to state that "the studies reported...do not confirm the belief that the average ability of high school pupils is lower today than in the past. If anything, the change is small, and upward rather than downward (p. 24)." The final conclusion of the report states:

> In fundamentals, today's pupils are superior to the pupils of the past. They now read more books more rapidly and with more understanding. (p. 24)

Geberich (1952) reviewed seven studies previously reviewed in this report. His purpose was to determine if "today's schools are less efficient than were the schools of some years ago in teaching pupils the basic skills of reading (p. 345)." Geberich concluded that: 1) today's schools are not less efficient than schools of years past in teaching reading; 2) that modern or activity schools are not less efficient than are conventional schools in teaching reading; and 3) that pupils educated in progressive schools are in no way retarded in reading in later educational experiences.

Accompanying this publication is an editorial comment by the editor-in-chief of the Phi Delta Kappan, Rolfe Lanier Hunt: "After reviewing the facts, we believe more children are being taught to read better today than ever before. (p. 344)"

IV. Problems and Variables Related to "Then and Now" Studies

Many of the problems and variables related to "then and now" studies have been referred to in the description of the individual studies. In the systematic investigation of any question, research design and the control of confounding variables is important. But due to the very nature of the studies discussed here, the element of time becomes the real nemesis. In order to ascertain any change in reading achievement, each study has to analyze reading achievement at two points in time--preferably with a period of considerable years separating the collection of data. However, elements like changing attendance laws, changing promotional policies, changing socioeconomic status of pupils in given geographical areas, and so on, require educators to question and qualify results to such a point that any generalizations they might make could be entirely valid.

The trend toward universal education has brought to the intermediate school and the high school, pupils that in past years may have withdrawn during their elementary school years. This trend has been fostered by a great many things, but is a reflection of our changing attendance requirements and laws. Gates points out in his study of reading achievement that the "nonacademic" children, children with intelligence quotients from 75 to 90, are remaining in school for increasingly longer periods of time due to our increased skill in managing and understanding these children.

In addition, in recent years there has been a trend away from promoting pupils on the basis of ability in reading and other subjects. Our current promotional policies are based mainly on chronological age. Many education writers have suggested that the policies of this system have served to lower the standards of our schools, and populate the schools with more and more children of below average ability. This idea has originated the much accepted generalization that reading achievement has decreased and our children are not learning as much as they once did.

There are many other confounding variables related to time. In order to insure matched groups on various scales such as socio-economic status and the like, experimenters collected data from the same schools or school systems. Obviously, collecting data is much simpler this way. But in the case of "then and now" studies, the intervening years served to change the schools and their populations. One need only look at national norms for a given standardized test and then the city-wide results for a city like New York, Chicago, or Los Angeles. City-wide results are almost universally lower than the national norms. Very simply, the sociological make-up of individual schools and neighborhoods is changing dramatically. To assume that two groups separated by twenty years are similar in all relevant aspects is unrealistic. Some authors like Bradfield attempted to analyze the sociological makeup of the communities in which they were working. But this proves to be quite an unwieldy task and very probably useless when the samples are exceedingly small.

Another consideration in assessing this research is the test instruments used in the various studies. Several of the authors point up the fact that it is important to use identical tests with both groups. In many cases, test data were found, and experimenters went to great lengths to obtain the same test so that it could be administered to a more recent student population. This sounds acceptable on the surface, but it leads us in reality, to still another problem: To what extent is the test used with the early group valid for the later subjects? Over the past few decades our elementary and high school curricula have undergone a great deal of change. Therefore, many feel that the earlier groups in each of the studies have had the advantage when identical tests were used. Caldwell and Courtis were the only researchers who tried to account for this factor. They chose thirty questions from the original exam that they considered valid for the later group and compared the two groups on that basis. This procedure seems to alleviate some of the problems of invalidity associated with the measuring instrument.

A final consideration in reviewing the research data that is available to us is that of differences in age and grade status. Gates looked at the reading achievement of two separate groups of pupils separated by twenty years. He, and other experimenters, found that when they compared the groups by grades, invariably the earlier group was higher in reading achievement. But when Gates compared the groups by chronological age rather than grade in school, the latter group appeared to be higher in reading achievement. Gates deduces that:

> The composition of the grade and classroom groups seems to have changed greatly during the two decades covered by this report. The school "grade" has become a very different entity. Today's grade five, for example, is composed of children who are eight to ten months younger and who have been in school approximately eight to ten months less, and it contains a considerable number of children who would have been in grades four or three or even grade two in yesterday's schools, or would have dropped out entirely. (p. 17)

One overriding difficulty in comparing two groups over time is the selection of variables on which the samples should not differ and those on which they may differ without invalidating the comparison. Gates, for instance, found his 1957 sample to have slightly higher IQ scores than his 1937 subjects. This could "explain" why the later group obtained somewhat higher reading scores. If, however, higher scores on intelligence tests are characteristic for any sample of the 1957 students, we should not interpret the difference in IQ's as creating a "mismatch" between the samples. Similar arguments can be advanced for other variables. On the other hand, a study of students in innercity New York using samples in 1930 and 1960 in which population shifts were not accounted for obviously neglected to control a very relevant matching variable.

Few, if any, of the researchers interpreting data in "then and now" studies deal with this problem of determining on which criteria their samples are or are not allowed to differ. Gates is a notable exception to this generalization.

V. Summary Statement and Statement of Conclusions:

Admittedly, the vast amount of data covered by the research reported here, is at best, diverse. In the interest of clarity, summary material concerning the research itself will be presented simultaneously with the authors' conclusions concerning the question, "Is Reading Instruction Improving?" This will be accomplished by discussing the research in terms of three discreet categories:

1. Early "then and now" studies not involving reading achievement per se.
2. Individual studies of "then and now" reading achievement.
3. Various summaries and reviews of individual "then and now" studies.

Early Studies on Trends in General Achievement. As stated earlier, a total of sixteen measures of various academic achievement ranging from philosophy to mental arithmetic were proposed in the six representative studies. In time, these studies spanned a 102-year period; in geography, the studies included two large eastern seaboard cities, two midwest cities and the state of Florida; and in academic levels, the studies covered grades four through nine. A total of slightly more than 33,000 school pupils were involved in the six studies.

These studies, with all their inherent research problems; seem to be pointing out a clear trend in American education: it is improving. The studies, however, leave us somewhat at a loss when we try to determine what in American education is improving. It is difficult to single out any one discipline (e.g., science, social studies, etc.) and state that it has improved. Furthermore, by no means can we state with any strong degree of assurance that because fourteen of sixteen measures of achievement in content areas showed gains, reading achievement has improved. We can only infer that if general achievement is increasing, the probability that reading achievement is also increasing is high, and the probability of the reverse is low.

Studies on Trends in Reading Achievement The thirteen studies in this section have a much broader range in terms of populations and communities than did the earlier studies. Geographically, the range is not what one might expect, with six studies falling in the central and midwest portion of the country, three in California, one in New York, and one in Canada.

The South was not represented at all, except in two studies that utilized national sampling techniques. The grade level of subjects varies from grade one to grade eleven, concentrating around the intermediate grades. The schools in which the studies were conducted ranged from small rural to large city schools.

Of the thirteen studies, all but one showed at least a slight overall gain. The one exception was the study by Boss in which measures of reading achievement were based largely on oral reading which between 1916 and 1938 had been increasingly deemphasized in the public schools. This is not to say that all gains were statistically significant, they weren't. In fact, all but a few researchers failed to analyze their results statistically, but two in particular (Burke and Anderson; Bradfield) stated clearly that the gains they observed were not statistically significant. Many authors were also somewhat hesitant to attach any educational significance to their findings. It is noteworthy that three studies (Worcester and Kline; Miller and Lanton; Fridian) that reported reading achievement across almost all grades and various subtasks of reading are very convincing. These three studies reported twenty-seven gains out of twenty-eight instances across grades and reading subtasks.

Another point to consider is the number of school students involved in these nineteen studies. Although an exact number of participants is impossible to compute since some investigators did not report this data, approximately 930,000 students were tested.

Summaries and Reviews. There have been several reviews of "then and now" research, but only four were considered to be worthwhile to report for the purposes of this paper. Witty and Coomer conclude their review of seven studies by stating: "reading ability of students at the present time is equal or superior to that of students five or more years ago...Instruction is as successful today as it was at any period in the past." (p. 457)

Two studies by The National Education Association follow Witty and Coomer. The first, "The Three R's Hold Their Own at the Midcentury," by its title indicates the stance the paper takes on the status of reading achievement. The paper puts forth the opinion, "that present day pupils for the most part equal, and often excel the achievement of pupils in similar grades in the past," (p. 5) and that there is a "slightly greater average ability in students of later groups when compared to earlier students "over a period of years."

The second NEA study, besides reviewing "then and now" research, reports other related and relevant research, including Army Achievement Test comparisons between draftees for World Wars I and II and broad studies of conventional versus newer-type teaching methods and their relationship to achievement. This study concludes by saying that, "In fundamentals, today's pupils are superior to the pupils of the past (p.24)."

Finally, Geberich reviewed seven "then and now" studies. Of the four summaries, his was the most cautious. He simply states that today's schools are not less efficient than schools of years past in teaching reading.

Final Comments and Conclusions. Before any conclusions can be stated, it might be worthwhile to consider again the special problems that plague "then and now" studies. First, the typical problems of experimental design, adequacy of population, and other problems already discussed are encountered. Beyond that, there are special problems:

1. The trend in universal education to keep more students in school for increasing lengths of time.
2. The fact that in many instances the chronological age of latter-group children tended to be lower than of the earlier children.
3. Differences in language and educational content that render tests used for earlier groups possibly inappropriate for later groups.
4. Changing promotional policies in the schools.

It is intriguing to contemplate what the results and conclusions of all the "then and now" studies might have been had these variables not entered the picture. It is even more intriguing since each of the four variables mentioned above would give all earlier-tested groups in all studies an undeniable advantage in terms of gains in achievement!

Chapter II

Reading Achievement in Metropolitan School Systems

Introduction

This chapter contains a compilation of reading achievement data collected from metropolitan areas across the country. These areas were contacted via questionnaires and were asked to forward reading achievement data they might have on students' reading test performance from 1950 to the present.

The selection of the cities followed three steps. First a list of the twenty-seven largest school districts in the country was developed. Secondly, a list of smaller districts was developed; and finally a supplementary list of school districts that were thought to have reading assessment programs but were not included on either of the first two lists was compiled.

Development of the Sample

The first step was to develop a list of the school systems of the 20 largest cities and request reading achievement data of students since 1950. However, school districts and cities are not always identical governmental units, as Tables 15 and 16 illustrate. The list of the 20 largest school populations (Table 16) and the list of the 20 largest city populations (Table 15) overlap, but do not coincide. The list was therefore expanded from 20 to 27, indluding members of all 3 lists (metro area, central city, and school districts) in order to cover a larger geographical area in terms of reading achievement data. For example, number 3 (Hato Rey, P.R.) and number 10 (the state of Hawaii) in Table 16 were excluded, while Atlanta (number 20 in Table 15) was included to represent the southern population more adequately. Table 17 alphabetically lists the 27 school districts finally selected for the sample.

Table 15 Twenty Largest Central Cities

	City	Population
1.	New York	7,894,862
2.	Chicago	3,366,957
3.	Los Angeles	2,816,061
4.	Philadelphia	1,948,609
5.	Detroit	1,511,482
6.	Houston	1,232,801
7.	Baltimore	905,759
8.	Dallas	844,401
9.	Washington, D.C.	756,510
10.	Cleveland	750,903
11.	Indianapolis	744,624
12.	Milwaukee	717,099
13.	San Francisco	715,674
14.	San Diego	696,769
15.	San Antonio	654,153
16.	Boston	641,071
17.	Memphis	623,530
18.	St. Louis	622,236
19.	New Orleans	593,471
20.	Phoenix	581,562

(Source: "Number of Inhabitants," U.S. Summary #PC (1)-A1, U.S. Dept. of Commerce, Census Bureau)

Table 16 Twenty Largest School Districts

School District	School Population
1. New York City	1,143,853
2. Los Angeles Unified	738,281
3. Hato Rey, Puerto Rico	668,520
4. Chicago City	537,449
5. Philadelphia City	291,494
6. Detroit City	266,231
7. Dade County, Florida	238,854
8. Houston, Isd.	221,960
9. Baltimore City	191,438
10. Hawaii, State of	181,147
11. Dallas Isd.	161,869
12. Prince George's County, Md.	159,491
13. Memphis City	148,513
14. Cleveland City	145,166
15. District of Columbia	144,326
16. Baltimore County, MD	133,830
17. Fairfax County, VA	133,067
18. San Diego Unified	128,489
19. Milwaukee	126,690
20. Montgomery County, MD	125,315

(Source: Education Directory, 1971-72 Public School Systems, DHEW (OE) #72-107, National Center of Educational Statistics)

Table 17 Final List of the Largest School Districts to be Contacted

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1. Atlanta, Georgia
2. Baltimore City, Maryland
3. Baltimore County, Maryland
4. Boston, Massachusetts
5. Chicago, Illinois
6. Cleveland, Ohio
7. Dade County, Florida
8. Dallas, Texas
9. Denver, Colorado
10. Detroit, Michigan
11. Fairfax County, Virginia
12. Houston, Texas
13. Los Angeles, California
14. Memphis, Tennessee
15. Milwaukee, Wisconsin
16. Montgomery County, Maryland
17. Newark, New Jersey
18. New York, New York
19. Philadelphia, Pennsylvania
20. Phoenix, Arizona
21. Pittsburgh, Pennsylvania
22. Prince George's County, Maryland
23. St. Louis, Missouri
24. San Diego, California
25. San Francisco, California
26. Seattle, Washington
27. Washington, D.C.

Data gathering for these twenty-seven school districts followed three steps:

1. Identifying and contacting the school superintendents;
2. Determining if and when reading achievement testing had been done;
3. Determining if reports of the testing were available and securing copies of these reports.

The school superintendents were identified through state educational publications. On September 14, 1972 explanatory letters and questionnaires (See Appendix for sample questionnaire) were sent to the superintendents of each of the 27 selected districts. A follow-up letter was composed which requested copies of available reports and was to be sent out as the questionnaires were received. Reminders and second copies of the questionnaires were sent to those who did not reply to the first round of inquiries.

Because of slow returns and a desire to have a broader coverage of schools included in the sample, 73 smaller school districts were added to the sample to bring the sample size to 100. These districts were selected to represent urban areas in every state, in different parts of each state. All of the previously omitted cities from Table were included and whenever possible, cities of more than 500,000 persons were selected. However, many states--e.g. Alaska, Idaho, Iowa, Oregon, Vermont, etc.--have no cities that large. In such cases, the largest school districts in the states were selected. This list was then expanded by contacting by letter reading experts and university professors in various parts of the United States asking them if they could suggest or recommend any school districts that might have data available regarding reading achievement over the past 10 to 20 years. Data collection followed the same steps as for the twenty-seven largest school districts.

Table 18 summarizes the returns from the questionnaire. The table is divided into 2 sections: the first describes the return from the 27 largest school districts in the country; and the second describes the return from the 73 smaller school districts. Checks in the columns indicate:

1. the questionnaire was returned;
2. the district reported doing testing;
3. the district published summaries of testing results;
4. copies of test results were received.

(a) Largest School District Response

The response was proportionally best from the 27 largest cities. Questionnaires were returned by 17 of the 27 (63%) and 16 (59%) of them said they had conducted reading achievement tests in the last 2 decades. Seven (26%) responded to requests for summary reports. Of these, 5 (Los Angeles, New York, Houston, Detroit, and Milwaukee) were primarily urban districts and 2 (Dade, Florida and Montgomery, Maryland) represented whole counties that could be characterized as suburban. The east coast, west coast, midwest, south, and southeast are represented by this sample.

Table 18 Responses From the Largest School Districts

School District	Returned Questionnaire	Testing Done	Reports Published	Reports Received
1. Atlanta, Ga.	X	X		
2. Baltimore, Md.				
3. Baltimore County, Md.	X	X	X	
4. Boston, Mass.				
5. Chicago, Ill.	X	X		
6. Cleveland, O.	X	X	X	
7. Dade County, Fla. (Miami)	X	X	X	X
8. Dallas, Tex.				
9. Denver, Colo.				
10. Detroit, Mich.	X	X	X	X
11. Fairfax County, Va.				
12. Houston, Tex.	X	X	X	X
13. Los Angeles, Calif.	X	X	X	X
14. Memphis, Tenn.				
15. Milwaukee, Wis.	X	X	X	X
16. Montgomery County, Md.	X	X	X	X
17. Newark, N.J.				
18. New York, N.Y.	X	X	X	X

Table 18 Response from Schools (cont'd)

School District		Returned Questionnaire	Testing Done	Reports Published	Reports Received
19. Philadelphia, Pa.		X	X	X	
20. Phoenix, Ariz.		X			
21. Pittsburgh, Pa.					
22. Prince George's County, Md.		X	X	X	
23. St. Louis, Mo.		X	X	X	
24. San Diego, Calif.					
25. San Francisco, Calif.					
26. Seattle, Wash.		X	X	X	
27. Washington, D.C.		X	X		
	Subtotal	17	16	13	7
	Per cent	63	59	48	26
1. Albuquerque, N.M.					
2. Anchorage Borough, Alaska		X	X	X	X
3. Augusta, Ga.		X	X	X	
4. Augusta, Me.					
5. Baton Rouge, La.		X	X		

Table 18 Response from Schools (cont'd)

School District	Returned Questionnaire	Testing Done	Reports Published	Reports Received
6. Birmingham, Ala.				
7. Boise, Id.				
8. Broward County, Fla. (Ft. Lauderdale)	X	X	X	
9. Buffalo, N.Y.				
10. Burlington, Vt.	X	X		
11. Butte, Mon.				
12. Caddo Parrish, La. (Shreveport)	X	X		
13. Charlotte, N.C.				
14. Charleston, S.C.	X	X		
15. Charleston, W. Va.				
16. Cheyenne, Wyo.				
17. Cincinnati, O.	X			
18. Colorado Springs, Colo.	X	X	X	
19. Columbia, S.C.				
20. Columbus, O.	X	X		
21. Des Moines, Ia.				
22. Duval County, Fla. (Jacksonville)	X	X	X	X

Table 18 Response from Schools (cont'd)

School District	Returned Questionnaire	Testing Done	Reports Published	Reports Received
23. Eugene, Ore.	X	X		
24. Fargo, N.D.				
25. Flint, Mich.				
26. Fort Worth, Tex.				
27. Grand Rapids, Mich.				
28. Greensboro, N.C.				
29. Greenville, S.C.				
30. Gulfport, Miss.				
31. Harrisburg, Pa.				
32. Hartford, Conn.				
33. Indianapolis, Ind.				
34. Jackson, Miss.				
35. Jersey City, N.J.				
36. Jonesboro, Ark.	X	X	X	X
37. Juneau, Alas.	X	X		
38. Kansas City, Mo.	X	X	X	
39. Knoxville, Tenn.				

Table 18 Response from Schools (cont'd)

School District	Returned Questionnaire	Testing Done	Reports Published	Reports Received
40. Las Vegas, Nev.				
41. Little Rock, Ark.	X	X	X	
42. Louisville, Ky.				
43. Manchester, N.H.				
44. Maricopa County, Ariz.				
45. Minneapolis, Minn.	X	X	X	
46. Mobile, Ala.				
47. Montgomery, Ala.				
48. New Haven, Conn.				
49. New Orleans, La.				
50. Oklahoma City, Okla.				
51. Ogden, Ut.	X			
52. Omaha, Neb.				
53. Pueblo, Colo.				
54. Peoria, Ill.				
55. Portland, Me.	X	X		
56. Portland, Ore.	X	X		
57. Providence, R.I.				

Table 18 Response from Schools (cont'd)

School District	Returned Questionnaire	Testing Done	Reports Published	Reports Received
58. Provo, Ut.				
59. Richmond, Va.	X	X		
60. Rochester, N.Y.	X			
61. Salt Lake City, Ut.	X	X		
62. San Antonio, Tex.				
63. Santa Fe, N.M.				
64. Sioux Falls, S.D.				
65. Spokane, Wash.				
66. Springfield, Mass.				
67. Tacoma, Wash.	X	X	X	X
68. Trenton, N.J.		X	X	
69. Tucson, Ariz.				
70. Tulsa, Okla.				
71. Wichita, Kans.		X	X	
72. Wilmington, Del.		X	X	X
73. Worcester, Mass.	X	X	X	X
Subtotal	28	25	12	5
Per cent	38	34	16	7
Grand total	45	40	25	12

(b) Smaller School District Response

From the 73 smaller school districts/cities, 28 (38%) replies were received, and 25 (34%) reported testing. However, only 12 (16%) said they did summaries; and only 5 (7%) made summary reports available. Again these are from widely separated parts of the country: Anchorage Borough, Alaska; Jonesboro, Arkansas; Duval County, Florida; Worcester, Massachusetts; and Tacoma, Washington.

(c) Overall Response

Overall, there was a 45% return of the questionnaire. Of the respondents, 40 reported testing; 25 published summaries; and 12 sent data. These reports represent districts from urban, suburban, and even rural districts in all geographic areas of the country. According to the return, 89% of the school districts responding tested for reading achievement by 1971. Of these, 35 described their reading assessment programs in some detail.

As previously stated, achievement data were received from 12 districts or systems. However, since trends in reading achievement between 1950 and 1971 would not be discernable from systems reporting only one, two, or three years data, a decision was made to report only on systems making achievement data available over at least a four year period.

Six school systems furnished achievement data for a period of four years or more. Following, then, is a description of each testing program and the achievement data that were made availabe for these six school systems. Several school systems requested that they not be named in a report of achievement data, hence the systems are lettered A through F. Of the six systems, two are relatively small, two are medium sized systems, and two represent large cities; two systems are located in the northwest portion of the United States, one represents the midwest, one represents the northeast, one represents the southeast, and one represents the southwest. The population for each of these school districts is given in Table 19 .

System A

System A has a comprehensive testing program; between 1962 and 1971, the Iowa Test of Basic Skills was used in grades 3 through 9. The school district switched to the SRA Achievement Tests in 1972.

In addition, system A reports that the Stanford Achievement Test has been used with grades one and 2, however, "due to difficulty in arriving at a total reading score," this data was not forwarded. Finally, system A reports that between 350 and 500 students were tested at each grade level each year. No information was available on how the students were selected.

Table 19 Populations for the Six School Districts Reported in this Chapter

	1950	1960	1970
System A	16,300	21,400	27,000
System B	11,300	44,200	48,000
System C	6,900	26,100	41,600
System D	275,000	320,000	410,000
System E	935,000	1,420,000	1,990,000
System F	3,020,000	3,760,000	4,200,000
Entire U.S.	151,325,798	179,323,175	203,235,298
Urban U.S.		125,268,750	149,324,930
Rural U.S.		54,054,425	53,886,996

Table 20 Average Grade Equivalents for Students in Grades 3 Through 9 in System A on the ITBS; (only total test grade equivalents are reported; no information on forms used is given).

Year		Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8	Gr. 9
1962 (Midyear)	white	3.8	4.7	6.1	7.2	7.7	8.9	9.3
	black	2.9	3.3	4.2	5.4	6.2	6.5	7.4
1963 (Dec.)	white	4.0	4.6	6.0	7.2	8.0	8.6	9.2
	black	2.8	3.9	4.4	5.2	6.1	7.0	6.9
1965 (May)	white	4.4	4.6	5.6	6.7	7.7	8.7	-
	black	2.8	3.1	3.8	4.7	5.5	5.8	6.6
1967 (May)		-	4.9	-	6.6	-	8.3	-
1968 (May)		-	4.9	-	6.7	-	8.2	-
1969 (May)		-	4.9	-	6.7	-	8.2	-
1970 (May)		4.1	4.7	5.8	6.8	7.6	8.2	8.7
1971 (May)		4.1	4.9	5.8	6.7	7.6	8.5	8.7

Table 20 reports total test performance in grade equivalents on the Iowa Test of Basic Skills between 1962 and 1971. Because scores of white students and black students are reported separately for 1962 through 1965, trends in achievement are somewhat difficult to isolate. Data are available over an 8 year period for grades 4, 6, and 8 however.

Grade 4 achievement over this time period is on the rise. Grade equivalents reported in the early years are surpassed beginning in 1967, and except for a slight drop of .2 in 1970, remain stable for the rest of the period.

Grade 6 performance is good in 1962 and 1963, but shows a marked drop in 1965, particularly in view of the fact that the time of testing changed. In 1967, scores of white and black students are combined and a steady rise is indicated in scores until 1971.

Grade 8 performance on the ITBS fluctuates over the 8 year period, reaching a grade equivalent score of 8.5 in 1971. It is difficult to assess eighth grade achievement, especially in light of ninth grade achievement reported for 5 different years. Ninth grade achievement is only slightly higher than eighth grade achievement, and in 1971 for example, is only .2 grade equivalent higher than eighth grade.

The data from system A, it should be noted, is more than just reading achievement data. It is data from the ITBS that covers reading, arithmetic, language skills, and work study skills. Therefore, specific inferences about reading achievement are limited.

System B

System B reports a testing program utilizing the SRA Achievement Series since 1959 in grades 2 through 8. In addition, system B reports that testing was also done in 1949, 1952, and 1958. However, it is unclear which tests were used these years. System B test scores are reported in median grade equivalents. No data regarding the students who were tested was forwarded. Presently, the system B testing program is assessing pupils at grades one through 6, according to city wide test reports.

Third grade achievement on the SRA Achievement Series in system B is reported for the years 1959 through 1971 (for some years, data are unavailable). Since the 1971 data are based on an April testing and all the other data on September-October testing, the data for 1971 is not included in the following discussion. Generally, a peaking effect is notable during the middle years of the period, followed by a dropping off of scores to roughly their 1959 level.

Fourth grade achievement in reading exhibits a steady rise in scores that peak in 1964, then drop off again to the 1959 level. Arithmetic and composite scores appear to rise steadily with no drop off through 1965.

Reading achievement in fifth grade follows the fourth grade pattern. However, arithmetic and composite show less of an overall increase.

Sixth grade reading achievement rises steadily, peaks in 1962, and proceeds to drop off markedly in the remaining years of the period, resulting in approximately one half year less in 1971 as compared to 1959. Arithmetic and composite scores also rise and peak in the middle years, but demonstrate a more gradual and less sizeable decline.

Seventh grade and eighth grade data are available for only a five year period. Across each subtest, achievement in both of these grades for the years reported shows a general rise.

Table 21 Grades 3 Through 8 Performance on the SRA Achievement Series in System B. (*Renormed in 1964)

Grade	Month	Year	Reading	Arithmetic	Composite
3	Sept.-Oct.	1959	3.2	2.9	3.0
	Sept.-Oct.	1960	3.4	3.1	3.2
	Sept.-Oct.	1961	3.5	3.1	3.3
	Sept.-Oct.	1962	3.6	3.1	3.4
	Sept.-Oct.	1963	3.7	3.2	3.4
	Sept.-Oct.*	1964	3.6	3.2	3.4
	Sept.-Oct.	1965	3.6	3.3	3.3
	Sept.-Oct.	1967	2.9	2.9	3.0
	Sept.-Oct.	1968	3.1	2.9	3.1
	Sept.-Oct.	1970	3.3	-	-
	April	1971	4.1	-	3.7
4	Sept.-Oct.	1959	4.1	3.9	3.8
	Sept.-Oct.	1960	4.5	3.7	4.2
	Sept.-Oct.	1961	4.5	4.0	4.3
	Sept.-Oct.	1962	4.5	4.1	4.4
	Sept.-Oct.	1963	4.7	4.2	4.5
	Sept.-Oct.*	1964	4.8	4.4	4.5
	Sept.-Oct.	1965	4.6	4.3	4.4
	Sept.-Oct.	1970	4.1	-	-
	April	1971	4.9	-	4.5
5	Sept.-Oct.	1959	5.0	4.8	5.0
	Sept.-Oct.	1960	5.5	5.1	5.4
	Sept.-Oct.	1961	5.4	5.1	5.4
	Sept.-Oct.	1962	5.3	5.2	5.5
	Sept.-Oct.	1963	5.2	5.1	5.4
	Sept.-Oct.*	1964	6.0	5.3	5.6
	Sept.-Oct.	1965	5.5	5.0	5.1
	Sept.-Oct.	1966	5.8	5.2	5.5
	Sept.-Oct.	1967	5.6	5.0	5.4
	Sept.-Oct.	1968	5.3	4.8	5.2
	Sept.-Oct.	1969	5.6	5.1	5.3
	Sept.-Oct.	1970	5.1	-	5.1
	April	1971	5.7	5.5	-
6	Sept.-Oct.	1959	6.7	5.7	6.3
	Sept.-Oct.	1960	7.0	5.8	6.5
	Sept.-Oct.	1961	7.2	6.1	6.7
	Sept.-Oct.	1962	7.4	6.2	6.9
	Sept.-Oct.	1963	7.1	6.7	6.8
	Sept.-Oct.*	1964	7.1	6.5	6.7
	Sept.-Oct.	1965	7.0	6.4	6.7
	Sept.-Oct.	1966	7.0	6.3	6.6
	Sept.-Oct.	1970	6.0	-	-
	April	1971	6.6	-	6.3

Table 21 Grades 3 through 8 Performance on the SRA Achievement Series in System B (cont'd)

Grade	Month	Year	Reading	Arithmetic	Composite
7	Sept.-Oct.	1959	7.3	6.4	6.9
	Sept.-Oct.	1960	8.1	6.9	7.5
	Sept.-Oct.	1961	8.1	7.1	7.7
	Sept.-Oct.	1962	8.0	7.2	7.8
	Sept.-Oct.	1963	8.2	7.1	7.9
8	Sept.-Oct.	1959	8.6	7.7	8.2
	Sept.-Oct.	1960	8.9	8.1	8.5
	Sept.-Oct.	1961	9.1	8.4	8.8
	Sept.-Oct.	1962	8.8	8.2	8.7
	Sept.-Oct.	1963	9.1	8.1	8.7

System C

System C reported that a city-wide testing program was initiated in 1966 in grades 3, 5, 7, 9, and 11. Table 22 reports achievement data for system C for grades 3, 5, and 7 between 1966 and 1972. Vocabulary, reading, and composite scores in Table 22 are taken from the Iowa Test of Basic Skills. A renormed version of this test was used in 1972. Verbal and non-verbal achievement scores in Table 22 for the years 1966 through 1971 are from the Lorge-Thorndike Intelligence Test, while these subtest scores beginning in 1972 were derived from the Cognitive Abilities Test.

Table 23 reports achievement data for grades 9 and 11 between 1966 and 1972. 1966 through 1971 data are derived from the Tests of Academic Progress. In 1972 ninth grade data was taken from the ITBS, and eleventh graders were no longer tested.

Although no information regarding the populations that were tested between 1966 and 1971 is provided, system C reports that achievement data in 1972 in grades 3, 5, 7, and 9 are based on 9293, 9641, 9764, and 9661 cases respectively--over 97 per cent of the total population in those grades. All data in Tables 22 and 23 are reported in median percentile scores.

Grade 3 reading achievement on the ITBS between 1966 and 1972 reflects a fairly steady decline in performance with the exception of achievement in vocabulary for 1972. Composite scores for third grade on the same test reflect this same general trend. However, verbal scholastic aptitude as measured by the Lorge-Thorndike Intelligence Test until 1971 is very stable, and non-verbal scholastic aptitude scores indicate a slight increase in achievement.

Vocabulary scores for fifth graders over this period demonstrate enough fluctuation that no trend is discernable; reading achievement shows a marked decline between 1966 and 1971 that appears to be on the rise for 1972. Composite scores for the ITBS follow the same pattern as reading achievement scores: a slight but steady decline. The higher scores in 1972 were obtained on a renormed test. Verbal scholastic aptitude scores also reflect a steady decline, while non-verbal scores conversely exhibit a slight increase.

Seventh grade reading achievement shows little change from 1966 through 1971. Scores are somewhat depressed in the intermediate years. Verbal scholastic aptitude scores fluctuate somewhat, while non-verbal scores appear to be rising.

Ninth grade reading achievement is steady until 1971 when performance drops off slightly. Math and composite scores on the ITBS seem to indicate a slight downward trend. Verbal achievement on the

Test of Academic Progress is stable 'till 1970, then turns downward, and rises sharply in 1972. Non-verbal achievement reflects an opposite situation with a great deal of fluctuation and finally an upward trend in 1970-71 that falls off sharply in 1972.

Since twelfth graders were tested in 1966 rather than eleventh graders, and test data were collected from only 5 schools in 1970, total eleventh grade achievement trends are more difficult to determine. However, reading, math, and composite test performance appear relatively stable until 1971, when they drop sharply. Verbal achievement is fairly stable throughout, while non-verbal achievement demonstrates a considerable rise over the period.

Table 22 Achievement Data from System C for Grades 3, 5, and 7 on the Lorge-Thorndike Intelligence Test, the Iowa Test of Basic Skills, and the Cognitive Abilities Test. (All reported in median percentiles.)

		Lorge-Thorndike Scholastic Aptitude		Iowa Test of Basic Skills		
Grade	Year	Verbal	Non-Verbal	Vocabulary	Reading	Composite
3	1966	71	71	65	68	76
	1967	71	75	65	66	76
	1968	71	79	65	66	73
	1969	71	79	65	66	70
	1970	71	77	65	63	73
	1971	71	79	62	63	73
	*1972	71	67	69	63	73
5	1966	71	79	70	64	71
	1967	69	79	67	62	69
	1968	67	77	70	62	69
	1969	67	79	65	60	67
	1970	69	83	67	60	67
	1971	67	83	67	57	67
	*1972	71	69	65	62	70

*1972 verbal and non-verbal scores derived from the Cognitive Abilities Test.

Table 22 Achievement Data from System C for Grades 3, 5, and 7 (cont'd)

Grade	Year	Lorge-Thorndike Scholastic Aptitude Verbal	Lorge-Thorndike Scholastic Aptitude Non-verbal	Iowa Test of Basic Skills Vocabulary	Iowa Test of Basic Skills Reading	Iowa Test of Basic Skills Composite
7	1966	69	75	69	59	66
	1967	69	75	69	59	64
	1968	71	79	65	58	64
	1969	71	79	62	56	62
	1970	69	84	67	59	62
	1971	67	83	67	58	62
	*1972	69	65	68	63	70

*1972 verbal and non-verbal scores derived from the Cognitive Abilities Test.

Table 23 Ninth and Eleventh Grade Achievement Scores in Median Percentiles in System on the Tests of Academic Progress and the ITBS.

Grade	Year	Scholastic Aptitude Verbal	Scholastic Aptitude Non-verbal	Reading	Math	Composite
9	1966	69	71	65	71	n.d.a.
	1967	69	69	65	71	69
	1968	69	73	65	67	65
	1969	69	75	65	71	69
	1970	67	79	65	67	65
	1971	65	79	61	67	65
	1972	71	71	61	n.d.a.	65
11	*1966	83	71	66	65	67
	1967	73	71	59	74	66
	1968	75	79	59	77	66
	1969	75	79	56	74	66
	**1970	81	88	59	77	66
	1971	75	87	52	71	62

*grade 12 tested in 1966
**data based on 5 schools only.

System D

System D reported initiating a testing program in 1953. However, this system made available only fifth grade data collected on the California Achievement Test Battery between 1954 and 1960 (See Table

24). Although the form of the test used was not named, system D reports a change in forms beginning in 1959 to Form W, 1957 Edition. System D also reports that an "item check" was performed on the new form that indicated it was at the same level of difficulty as the old form. However, since grade equivalent scores are reported, this is of little relevance for the present purposes.

In addition, system D also reports achievement data on sixth graders (reported in Table 25) between 1955 and 1961. This data consists of subtest scores on the California Achievement Test Battery and the California Mental Maturity Test, 1957 form. The form of the CAT is not reported initially; however, the system reports that the 1957 Edition, Form W was used in 1959 and 1960 and that the 1957 Edition, Form Y in 1961.

Although no information on the selection procedures used for choosing the test population was made available, the number used at each grade level was large enough to "ensure a reliable group result" according to the school system.

Achievement of fifth graders on the California Achievement Test in reading, arithmetic, and language between 1954 and 1960 appears to be on the rise. A slight rise in achievement in all three areas is noticeable between 1954 and 1958; the sudden rise in scores for 1959 and 1960 might be attributable to a change in test forms.

Achievement in reading, arithmetic, and language of sixth graders reflects a very obvious rise. Between 1955 and 1958, this rise is fairly gradual, becoming much more noticeable in 1959 through 1961. Again, this rise in later achievement could be attributable to new test forms.

Table 24 Fifth Graders' Performance on the California Achievement Test Battery, 1954-1960 for System D.

(Form unnamed.)

Year	Reading		# of S's	Arithmetic		# of S's	Language		# of S's
	Mean G.E.	S.D.		Mean G.E.	S.D.		Mean G.E.	S.D.	
1954	5.217	1.17	2046	4.91	.72	2033	5.63	.98	2039
1955	5.30	1.41	1887	5.25	.76	1873	6.14	1.17	1906
1956	5.256	1.33	2188	5.123	.80	2176	5.621	1.03	2183
1957	5.44	1.37	2711	5.25	.70	2729	5.70	.99	2718
1958	5.25	1.26	2545	5.27	.72	2557	5.75	1.03	2554
*1959	5.99	1.43	2497	5.58	.96	2498	5.78	1.39	2495
*1960	5.92	1.44	2447	5.45	.95	2448	6.00	1.39	2444

*New form used.

Table 25 Sixth Graders' Performance on the California Achievement Test Battery and the CMMT (1957 Forms) Intelligence Test between 1955-1961 for System D.

Year	Reading		# of S's	Arithmetic		# of S's	Language		# of S's	Mean IQ	# of S's
	Mean G.E.	S.D.		Mean G.E.	S.D.		Mean G.E.	S.D.			
1955	6.58	1.32	2140	6.46	.83	2127	6.54	1.01	2138	n.d.a.	n.d.a.
1956	6.55	1.43	1996	6.49	.90	2005	7.07	1.19	1987	n.d.a.	n.d.a.
1957	6.54	1.38	1858	6.59	.89	1846	6.56	1.10	1852	104.23	1835
1958	6.69	1.41	2122	6.59	.88	2123	6.61	1.06	2117	105.52	2114
*1959	7.31	1.36	2745	7.12	1.24	2747	6.96	1.38	2737	104.25	2743
*1960	7.32	1.36	2461	7.06	1.30	2480	7.07	1.34	2465	104.84	2465
*1961	7.33	1.40	2434	6.94	1.24	2422	7.40	1.49	2432	107.73	2443

*New form of California Achievement Test Battery used.

System E

System E reports achievement data for grades 3, 4, 5, 6, and 8 on the Stanford Achievement Test between 1956 and 1962. These data are reported in Table 26 . System E also reports data on the Iowa Test of Basic Skills for grades 3 through 6 between 1966 and 1972. These data are reported in Table 27 . This system also reports having a testing program beginning in 1949. A great deal of this data is unavailable, however. It should be noted that data in Table 26 were originally reported separately for black and white students. Means were recalculated for the combined group so that they might be more easily interpreted.

Third grade reading data between 1956 and 1962 demonstrate a steady rise in achievement. Arithmetic data fluctuate more, but still portray a slight rise for this period. It should be noted that the 1962 scores are based on tests in May, rather than in September.

Grade 4 reading data, as well as grade 5 reading data, picture some fluctuation, but generally a rise in reading achievement. Other achievement data for these grades were not available.

Grade 6 data in reading, arithmetic, and language exhibit a rise in achievement that appears to peak around 1959 or 1960, then drop off somewhat. Generally, an overall rise in achievement is evident.

Reading data in grade 8 are a great deal more uneven, but evidencing an overall upward trend in achievement. The same is true for language achievement. Through 1964 arithmetic reasoning scores rise dramatically, whereas arithmetic computation scores stay relatively stable. Both drop sharply in 1965.

Table 27 shows that grade 3 achievement between 1966 and 1970 on the ITBS on all subtests remain relatively stable. A decline in scores seems evident after this point. Approximately the same pattern is evident in fourth, fifth, and sixth grade achievement data.

Table 26 Performance on Stanford Achievement Test of third, fourth fifth, and sixth grades for System E.

				Reading			Arithmetic	
Grade	Month & Year Tested		# of S's	Para. Mean	Word Mean	Language	Arith. Reas.	Arith. Comp.
3	Jan.	1956	8,782	3.65	3.49	-	3.75	3.21
	Jan.	1957	8,581	3.65	3.55	-	3.42	3.20
	Jan.	1958	9,248	3.93	3.78	-	3.70	3.35
	Jan.	1959	9,106	3.63	3.63	-	3.56	3.19
	Jan.	1960	10,065	3.91	3.99	-	3.47	3.47
	Jan.	1961	12,558	4.10	3.93	-	3.80	3.45
	May	1962	16,946	4.16	4.20	4.71	4.27	4.02
4	Sept.	1957	8,728	3.96	3.86	-	-	-
	Sept.	1958	8,871	3.95	4.12	-	-	-
	Sept.	1959	9,034	4.11	4.21	-	-	-
	Sept.	1960	10,064	4.27	4.21	-	-	-
	Sept.	1961	12,576	4.00	4.17	-	-	-
	May	1962	12,842	5.08	5.11	6.06	5.52	5.30
5	Sept.	1957	8,831	4.72	4.95	-	-	-
	Sept.	1958	8,451	4.90	5.08	-	-	-
	Sept.	1959	8,979	4.88	5.16	-	-	-
	Sept.	1960	9,001	5.07	5.17	-	-	-
	Sept.	1961	9,839	4.95	5.32	-	-	-
	May	1962	9,572	6.40	6.63	6.98	6.55	6.05
6	May	1956	6,606	7.24	7.32	7.26	7.24	7.38
	May	1957	6,659	7.09	7.55	7.42	7.35	7.59
	May	1958	6,972	7.72	7.80	7.48	7.75	7.56
	May	1959	8,379	7.81	7.93	7.61	7.91	7.67
	May	1960	8,204	8.08	7.59	8.05	7.77	7.58
	May	1961	8,816	7.72	7.69	7.62	7.87	7.49
	May	1962	8,968	7.87	7.65	7.47	7.83	7.31

Table 26 Median Grade Equivalents for Eighth Graders on the Stanford Achievement Tests, 1956-1965 (Continued from page 89.)

Grade	Date Tested	# of S's	Reading		Language	Arithmetic	
			Para. Mean.	Word Mean.		Arith. Reas.	Arith. Comp.
8	Fall 1956	6,461	8.12	8.43	8.34	8.17	7.90
	Fall 1957	6,146	8.65	8.83	8.05	8.48	8.28
	Fall 1958	6,193	8.37	8.75	8.45	8.07	7.89
	Fall 1959	6,575	8.36	8.92	8.86	8.52	8.18
	Fall 1960	8,148	8.86	9.08	n.d.a.	8.61	8.21
	Fall 1961	8,177	8.22	8.76	8.51	8.98	8.16
	Fall 1962	8,943	8.18	8.83	8.94	8.93	7.98
	Fall 1963	9,011	8.21	8.86	8.62	8.53	7.97
	Fall 1964	9,818	8.54	8.95	8.94	8.96	7.88
	Fall 1965	11,676	8.4	8.9	8.6	8.3	7.6

Table 27 Mean Grade Equivalent Scores of Third, Fourth, Fifth, and Sixth Grades on the Iowa Test of Basic Skills

Grade	Year	# of S's	Reading		Arithmetic		Comp. Score	Form
			Vocab.	Rdg. Comp.	Arith. Concepts.	Arith. Prob.Sol		
3	1966	20,104	3.67	3.86	3.97	4.09	3.91	3
	1967	20,126	3.72	3.84	4.04	4.10	3.89	4
	1968	15,360	3.71	3.84	4.01	4.03	3.87	4
	1969	20,023	3.65	3.78	3.85	4.01	3.85	3
	1970	20,649	3.72	3.82	4.01	4.06	3.88	4
	1971	19,678	3.45	3.53	3.54	3.55	3.54	3
	1972	19,079	3.40	3.49	3.69	3.56	3.51	4
4	1966	18,966	4.51	4.64	5.02	4.96	4.80	3
	1967	19,482	4.50	4.57	5.04	4.96	4.78	4
	1968	15,014	4.55	4.62	5.05	4.97	4.80	4
	1969	19,431	4.50	4.61	4.90	4.91	4.76	3
	1970	19,487	4.51	4.50	4.98	4.93	4.72	4
	1971	19,065	4.25	4.31	4.54	4.53	4.42	3
	1972	18,647	4.13	4.14	4.52	4.24	4.27	4
5	1966	17,650	5.53	5.61	6.09	5.88	5.80	3
	1967	17,861	5.55	5.58	5.85	5.77	5.77	4
	1968	15,392	5.59	5.60	5.81	5.74	5.77	4
	1969	18,310	5.46	5.53	5.87	5.73	5.70	3
	1970	18,735	5.57	5.50	5.70	5.69	5.68	4
	1971	18,133	5.20	5.21	5.53	5.35	5.36	3
	1972	17,921	5.26	5.14	5.27	5.13	5.27	4
6	1966	16,877	6.53	6.58	7.09	6.91	6.80	3
	1967	17,367	6.45	6.40	6.62	6.71	6.62	4
	1968	16,009	6.55	6.44	6.64	6.73	6.67	4
	1969	18,649	6.38	6.50	6.71	6.68	6.65	3
	1970	18,136	6.49	6.37	6.54	6.72	6.58	4
	1971	17,865	6.13	6.20	6.38	6.31	6.30	3
	1972	17,467	6.14	5.96	6.02	6.10	6.11	4

System F

System F maintains a city-wide testing program for grades 4, 6, 8, 10, and 12. Although system F reports that its testing program has been in operation since 1956, they have made available only data collected between 1966 and 1970.

The Iowa Test of Basic Skills is utilized in this system in grades 4, 6, and 8; mean grade score equivalents for these grades on the ITBS are reported in Table 28 . In grades 10 and 12 the Sequential Tests of Educational Progress are used; mean converted score units are reported for the STEP in Table 29 along with the national means. Particular forms of each test used are not named.

Grade 4 vocabulary achievement is fairly stable over the 5 years reported on the ITBS. Reading comprehension, however, drops 5 months. This drop occurs in the beginning of the period for 1965-1966. The composite fourth grade achievement scores are stable.

Sixth grade achievement evidences a more general drop in achievement. A one to 5 month drop occurs for all subtests.

Reading comprehension and vocabulary achievement scores on the ITBS in the eighth grade exhibit a loss of about 5 months over the 5-year period. Arithmetic and composite scores on the ITBS also demonstrate a downward trend, but not of quite the same magnitude.

Subtest data in reading, math, and science on the STEP test for tenth and twelfth graders indicate a steady drop in achievement across the board. In evaluating this data, it should be kept in mind that after 1967 the tests were given in June rather than in October.

Table 28 Mean Grade Equivalents on ITBS for Grades 4, 6, and 8 in System F.

Year	Grade	Vocabulary	Reading Comprehension	Arithmetic	Composite	Number Tested
1966	4	3.3	3.4	3.5	3.5	12,398
1967	4	3.1	3.2	3.4	3.4	13,433
1968	4	3.2	3.1	3.5	3.4	17,347
1969	4	3.2	3.2	3.5	3.4	17,836
1970	4	3.3	3.2	3.5	3.5	17,683
1966	6	5.2	5.2	5.1	5.2	12,334
1967	6	5.2	5.1	4.9	5.1	12,675
1968	6	5.0	5.1	5.0	5.1	12,306
1969	6	4.9	5.0	4.9	5.0	13,823
1970	6	5.1	5.0	5.0	5.1	17,450
1966	8	7.2	7.1	6.9	7.2	11,516
1967	8	7.0	6.8	6.7	7.0	11,184
1968	8	6.9	6.6	6.6	6.8	10,712
1969	8	6.8	6.6	6.5	6.7	11,667
1970	8	6.8	6.6	6.6	6.8	11,334

Table 29 Means in Converted Score Units on STEP Test for System F

Tenth and Twelfth Grades

Year	Grade	Reading	Math	Science	Number Tested
October 1966	10	279	263	269	12,686
October 1967	10	279	262	268	12,841
June 1968	10	277	261	267	11,504
June 1969	10	275	260	266	10,821
June 1970	10	274	259	265	10,029
October 1966	12	292	274	279	9,755
October 1967	12	291	273	278	10,084
June 1968	12	290	271	277	8,498
June 1969	12	289	270	276	8,234
June 1970	12	288	269	275	7,979
National Mean	10	284	268	275	-
National Mean	12	294	276	281	-

Conclusion

If the major intent of this report was to demonstrate that very few if any hard conclusions about trends in reading achievement can be drawn, the data presented in this chapter would make an ideal case. As it is, however, an attempt will be made to very tentatively summarize the interpretations of the information presented in this chapter.

It appears that the largest factor inhibiting strong conclusions from this data is absence of information about the stability of the student population tested at each point in time. Table 19 shows the growth of each of the systems from 1950 to 1970. It is quite clear, for instance, that system B and system C have grown at a rate disproportionate to that of the entire nation and in a lesser extent to the growth rate of systems F, E, D, and A. Though this information may be of some help in interpreting the data for each school system, one must keep in mind that only quantitative changes in student population are indexed by it. We have no way of knowing what happened qualitatively.

The matter of postulating explanations for changes will be dealt with once more in the final chapter. For the moment, only the actual changes will be considered, without attention to why they may have occurred. Overall, it appears as though between 1960 and 1965 there may have been a slight rise in the test performance of the students in most of the school systems. Generally, however, the 1970 level of performance is slightly lower than that of 1960 or 1965. The actual discrepancies differ from school system to school system. There are also some exceptions to this generalization. In addition it appears that the test performance of students in the lower grade levels has not fallen off as much as the test performance of students in the higher grades. Stated another way, discrepancies between 1960 and 1970 performance are greater at the upper grade levels than they are at the lower grade levels.

These conclusions are based on the data of very few school systems. The degree to which these systems are representative of the school systems in this country general is not known. For this reason it is better for the moment to postpone any further interpretation of this data and to revisit the information presented after consideration of the data included in the next chapter.

Before leaving this chapter, however, the problems of collecting test information from cities should be considered. Obtaining data from school districts is difficult for several reasons. First, because of the criticisms of city schools' reading programs in recent years, major school districts tend to be concerned about confidentiality. They do not want their test results published. It was the low return rate from the 27 largest school districts that prompted us to send questionnaires to 73 smaller districts. But there again we encountered the concern with confidentiality. In fact, from the smaller districts a lower return rate, and a smaller percentage of published summaries was evidenced.

More than half of the reporting districts admitted to having published summaries of their test results (87% of the larger districts said they published reports; but only 50% of the smaller districts did). This seems to be the result of a different problem than confidentiality.

The smaller school systems may lack the money and personnel necessary to compile and publish test summaries. Responses to requests for reports indicate that, particularly in earlier years and in smaller school districts, there are no published reports and/or the data are inaccessibly stored, out of print or otherwise unavailable. Hence, of the twelve districts that sent copies of reports, only three (25%) had (or included) any information before 1960. An equal number sent results for only the last year or two.

Three factors suggest that the results from cities can be compared across time only with extreme caution:

a. changes in tests and testing programs
b. changes in curricula
c. changes in populations

The first two are common to all phases of studies such as this one. Today's tests neither ask the same questions nor are scored in the same way as those of 1950. A 3.2 grade equivalent score in 1950 is equal to a 3.2 grade equivalent in 1971 only insofar as the same things are expected of a student at the 3.2 level in 1950 and 1971.

The third factor, changes in the population, however, affects the urban school districts especially. In the last twenty years, there has been a massive migration of rural people to large cities. Urban populations are growing, but the middle class is moving out to suburbs, changing the socio-economic profiles of the large city's school population. The socio-economic status of students in the largest cities has changed radically.

Even the smaller cities are experiencing problems of population growth and socio-economic shifts. Stable school districts are the exception rather than the rule. Probably the most stable district located was District D, reported above; it is also probably the smallest least urban district.

Hence, the most reliable comparisons possible represent a very small proportion of the population and an atypical environment. One hesitates to generalize the results of the programs.

An additional problem in trying to compare the test results is the manner in which they are reported. Districts variously report means and medians, grade equivalents and percentiles. They do not always report how many students were tested or at what time of year. Some or all of these factors may be changed in the course of a testing program, so the summaries must be read carefully in every case.

Chapter III

Reading Achievement in the States

Introduction

This chapter contains a compilation of reading achievement data collected from the states. Originally four sources of data were thought to be useful in collecting information about reading achievement on a state basis:

1. State Education Departments
2. Independent School Data from the Educational Records Bureau
3. Census Data
4. Army Classification Test Results

The introduction to this total report describes the problems encountered in gathering information from the last two of the above sources. Because of these problems, the information in this chapter is based only on reports from State Education Departments and from the Educational Records Bureau. This chapter will deal with the data collected from each of those sources individually.

Contacting the States

The procedures utilized in collecting data from the fifty states were roughly the same as those used in collecting city data. These procedures are described in Chapter II.

In August, 1972, a list of evaluation and research administrative personnel from each state was developed. This list contained the names of those people in each state who were most likely to have at their disposal the achievement data which was to be collected. Two sources provided the names for this list: *Education Directory: State Governments 1969-1970* published by the United States Department of Health, Education, and Welfare--Office of Education; and *The Book of the States (Supplements)* (1971), published by the Council of State Governments.

Once the initial list of state personnel was compiled, the first mailing of the questionnaires took place. (See Appendix for a copy of the questionnaire) The initial mailing resulted in approximately a twenty percent return. Many of the returns referred this project to other people or administrative offices in the state that might have the information being sought.

In October, 1972, a second mailing of the questionnaire was initiated. All states that had not responded and states that referred the project to another source were sent duplicate questionnaires. Six weeks later, project personnel attempted to reach remaining states via telephone interviews. Seven such attempts proved fruitful. A third questionnaire was mailed to those states that had again referred the project to other sources within the state.

Table 30 lists all fifty states in five categories: (1) data and questionnaire returned, (2) only questionnaire returned, (3) only data returned, (4) a response returned, but no data or questionnaire, and (5) no response.

Table 30

Data and Questionnaire Returns For All Fifty States

1. Data and Questionnaire Returned (n = 16; 32%)

Alabama
California
Delaware
Georgia
Hawaii
Idaho
Iowa
Michigan
Minnesota
Mississippi
New Hampshire
New Mexico
New York
Oregon
Tennessee
West Virginia

2. Questionnaire Only Returned (n = 20; 40%)

Alaska
Arizona
Colorado
Connecticut
Florida
Illinois
Kentucky
Louisiana
Massachusetts
Montana
Nebraska
Nevada
North Dakota
Pennsylvania
Rhode Island
South Dakota
Texas
Washington
Wisconsin
Wyoming

3. Data Only (n = 1; 2%)

Ohio

4. A Response Returned: No Data, No Questionnaire (n = 4; 8%)

Arkansas
New Jersey
Oklahoma
South Carolina

5. No Response At All (n = 9; 18%)

Indiana
Kansas
Maine
Maryland
Missouri
North Carolina
Utah
Vermont
Virginia

Problems In Obtaining And Interpreting Data

Many of the problems involved in obtaining and interpreting data of the kind dealt with in this report have been alluded to in previous sections. Reluctance on the part of individual states to furnish test data was certainly a major problem although the extent of this limitation cannot even be estimated.

As previously stated, educational systems are hesitant to provide test data in light of the criticisms that have been leveled at educational institutions in recent years. It is entirely possible that only those states that showed gains in achievement over a period of time responded to the request for data.

In addition, using a questionnaire for collecting the data may not have been the best strategy. Few people want to be bothered by such matters as filling out a questionnaire and sending the data requested. The questionniare used in this study was four pages long, required information that may not have been easily available, and may even have been somewhat misleading. For example, the first question asked was, "Has a state wide achievement testing program been available to the schools of your state during a major proportion of the 20 year period from 1950 through 1970?" Many respondents assumed if the answer to the first question was "no," the task of completing the questionnaire was completed. Thus, we received many incompletely answered questionnaires.

There are also obvious problems with the data received. States with testing programs frequently changed the tests used making comparisons difficult if not impossible. And in many instances it was extremely difficult extracting from the state reports that data which was necessary to this study. That is, methods of reporting the data changed; in several cases, a state might report mean grade equivalents for a number of years, and then for no apparent reason shift to reporting median grade equivalents.

Another problem encountered related to the populations being tested. Few state reports did an adequate job of describing their populations and sampling methods. In fact, few states adequately described the scope and nature of their statewide testing program.

Finally, all those problems that plague "Then and Now" studies in general, affect the interpretation of the data. Changes in curriculum, socio-economic makeup, and attendance requirements make the task of interpreting the data difficult.

The data for the states are reported and discussed in two parts. First, the test results are discussed for states with testing data available for at least three but no more than six years. Secondly, the test results for states with testing programs in existence for more than six years are discussed. A number of states reported data on testing programs that have been in existence for less than three years. For obvious reasons, this data is not included.

Table 31

State Testing Programs of Reading Achievement

State	Testing Program Available for Major Proportion of Years 1950-70?	Who Coordinates Program?	Is Participation in Program Required?
Alabama	1959	State Department of Education	Yes
Alaska	No	N.R. *	N.R.
Arizona	No 1971-	N.R.	Yes
Arkansas	No	N.R.	N.R.
California	1966-	State Department of Education	Yes
Colorado	No	N.R.	No
Connecticut	No	N.R.	N.R.
Delaware	1968-	State Department of Education	No
Florida	No	N.R.	No
Georgia	1971-	State Department of Education	Yes
Hawaii	1954-	State Department of Education	Yes
Idaho	1960-	State Department of Education	No
Illinois	No	N.R.	N.R.
Indiana	N.R.	N.R.	N.R.
Iowa	1949-	University	No
Kansas	N.R.	N.R.	N.R.
Kentucky	1965-	State Department of Education	No
Louisiana	No	N.R.	N.R.
Maine	N.R.	N.R.	N.R.
Maryland	N.R.	N.R.	N.R.
Massachusetts	1970-	State Department of Education	Yes
Michigan	1970-	State Department of Education	Yes
Minnesota	1949-	University	No
Mississippi	1970-	N.R.	No
Missouri	N.R.	N.R.	N.R.
Montana	No	N.R.	No
Nebraska	No	N.R.	N.R.
Nevada	1971-	N.R.	No
New Hampshire	1950-	Department of Education and Univeristy	No

* No Response

Table 31

State Testing Programs of Reading Achievement (Cont'd)

State	Testing Program Available for Major Proportion of Years 1950-70?	Who Coordinates Program?	Is Participation in Program Required?
New Jersey	1972	N.R.	N.R.
New Mexico	1971-	N.R.	Yes
New York	1965-	State Department of Education	Yes
North Carolina	N.R.	N.R.	N.R.
North Dakota	1966-	State Department of Education	No
Ohio	N.R.	N.R.	N.R.
Oklahoma	No	N.R.	N.R.
Oregon	1961-	State Department of Education	No
Pennsylvania	No	N.R.	N.R.
Rhode Island	1962-	State Department of Education and Univeristy	Yes
South Carolina	N.R.	N.R.	N.R.
South Dakota	1957-	State Depsrtment of Education	No
Tennessee	1968-	State Department of Education	No
Texas	1955-64; 1971-	State Department of Education	No
Utah	N.R.	N.R.	N.R.
Vermont	N.R.	N.R.	N.R.
Virginia	N.R.	N.R.	N.R.
Washington	No	N.R.	N.R.
West Virginia	1962-	State Department of Education	Yes
Wisconsin	1951-	University	No
Wyoming	No	N.R.	No

Table 32

State Testing Programs of Reading Achievement

State	*Tests Used	Grades Tested	Data Collated By	Annual Reports?	Other Reports?
Alabama	04	8, 11	state	yes	no
Alaska	N.R.	N.R.	N.R.	N.R.	N.R.
Arizona	22	3	school, state, district	Yes	No
Arkansas	N.R.	N.R.	N.R.	N.R.	N.R.
California	00, 32, 34, 37	1,2,3,6, 10, 12	school, state, district	Yes	Yes
Colorado	N.R.	N.R.	N.R.	N.R.	N.R.
Connecticut	N.R.	N.R.	N.R.	N.R.	N.R.
Delaware	00, 22	1,4,5,8	school, state, district	Yes	Yes
Florida	N.R.	N.R.	N.R.	N.R.	N.R.
Georgia	19, 34	4,8,12	school, state, district	Yes	No
Hawaii	04,06,30	2,4,6,8, 10, 12	school, state, district	Yes	Yes
Idaho	37	11	school, state, district	Yes	No
Illinois	N.R.	N.R.	N.R.	N.R.	N.R.
Indiana	N.R.	N.R.	N.R.	N.R.	N.R.
Iowa	19, 37	3-12	school, state, district	Yes	Yes
Kansas	N.R	N.R.	N.R.	N.R.	N.R.
Kentucky	04	4,8,11	school and district	No	No
Louisiana	N.R.	N.R.	N.R.	N.R.	N.R.
Maine	N.R.	N.R.	N.R.	N.R.	N.R.
Maryland	N.R.	N.R.	N.R.	N.R.	N.R.
Massachusetts	04	4,7	school and district	Yes	Yes
Michigan	00	4,7	school, state, district, community	Yes	Yes
Minnesota	06,19,31, 32, 37	7-12	school district, state	No	No
Mississippi	04	5,8	school, state, district	Yes	Yes
Missouri	N.R.	N.R.	N.R.	N.R.	N.R.
Montana	N.R.	N.R.	N.R.	N.R.	N.R.
Nebraska	N.R	N.R.	N.R.	N.R.	N.R.

Table 32

State Testing Programs of Reading Achievement (Cont'd)

State	*Tests Used	Grades Tested	Data Collated By	Annual Report?	Other Reports?
Nevada	38	3	school, state geographical area	Yes	Yes
New Hampshire	06,22, 32	3,4,6,8, 10	school, state, district	Yes	No
New Jersey	N.R.	N.R.	N.R.	N.R.	N.R.
New Mexico	00	5,8	school, state, district	Yes	No
New York	00	3,6,9	school, state, district	Yes	Yes
North Carolina	N.R.	N.R.	N.R.	N.R.	N.R.
North Dakota	19, 29, 37	4,6,8, 9, 11	school, state	No	No
Ohio	N.R.	N.R.	N.R.	N.R.	N.R.
Oklahoma	N.R	N.R.	school	N.R.	N.R.
Oregon	29, 37	4,9,11	state	Yes	No
Pennsylvania	N.R.	N.R.	N.R.	N.R.	N.R.
Rhode Island	04, 19	4,6,8	school, state, district	Yes	N.R.
South Carolina	N.R.	N.R.	N.R.	N.R.	N.R.
South Dakota	37	9,11	school	Yes	No
Tennessee	22,32	1-12	school, state, district	Yes	No
Texas	00	6	school, state	Yes	Yes
Utah	N.R.	N.R.	N.R.	N.R.	N.R.
Vermont	N.R.	N.R.	N.R.	N.R.	N.R.
Virginia	N.R.	N.R.	N.R.	N.R.	N.R.
Washington	N.R.	N.R.	N.R.	N.R.	N.R.
West Virginia	00, 30, 32	3,6,9, 11	school, state, district	Yes	Yes
Wisconsin	30, 37	4-12	school, state	No	No
Wyoming	N.R.	N.R.	N.R.	N.R.	N.R.

*Refer to appendix for test references

Three to Six Years of Testing

Hawaii reports a statewide testing program in reading using the Sequential Tests of Educational Progress. On the questionnaire, data across six grades on the California Achievement Tests and the Cooperative English Tests is also reported, but only part of this data was forwarded.

However, data on the STEP Test between 1965 and 1971 was forwarded and is reported in Table 34. This data is available for grades four, six, eight, ten, and twelve and reports only the "midpoint of the percentile band" which can be compared to the publisher's norming data. In grades two through twelve, Hawaii has consistently tested an overwhelming majority of the students available for each grade. In most cases, all but several hundred students were tested for each particular grade level.

An examination of Hawaii's data on the STEP Test points up some interesting trends. Grade four data is consistently comparable to the publisher's data, staying at or near the fiftieth percentile for each year. Grade six data over the period reported is consistently higher than the publisher's norming data, as is grade eight data for each year except 1970-71. However, grade ten data shows a trend in reading achievement that is consistently lower than the norming data, and grade twelve is extremely low for each year reported in relation to the norming data.

In addition, data was forwarded on the California Reading Test, Upper Primary, Form W (1963 norms) for grade two. Table 33 reports this data and demonstrates reading achievement that is above the publisher's mean and that remains quite stable over the six year period.

Generally, no definite trends in reading achivement can be interpreted from Hawaii's data. The California Reading Test data indicate a slight downward trend since 1968-69 for second graders. Data on the STEP Test indicate no real movement in achievement.

Table 33

Total Score of Hawaii Second Graders on California Reading Test, (upper primary, Form W; 1963 norms).

Year	Cases	Grade Equivalent	Percentile	S.D.	Total Grade Enrollment
1965-6	13,185	3.1	69	0.8	13,664
1966-7	13,567	3.1	69	0.9	13,948
1967-8	13,745	3.1	69	0.9	13,966
1968-9	14,048	3.1	69	dna	14,381
1969-70	14,791	3.0	66	dna	14,867
1970-71	14,700	2.9	62	0.9	14,899

Table 34

Midpoint Percentile Rankings of Grade 4, 6, 8, 10 and 12th grade Hawaii Students on the Sequential Test of Educational Progress.

Year	Grade	Cases	Midpoint of Percentile Band	S.D.	Total Grade Enrollment
1965-6	4	12,963	50	14	13,429
	6	12,520	58	18	12,722
	8	11,441	54	19	11,800
	10	10,217	43	19	10,666
	12	9,115	44	19	9,413
1966-7	4	13,360	46	13	13,569
	6	12,893	54	17	13,035
	8	11,879	54	19	12,126
	10	10,870	43	18	10,999
	12	9,804	40	20	9,987
1967-8	4	13,195	50	13	13,462
	6	13,257	58	18	13,511
	8	12,404	54	19	12,728
	10	11,352	49	19	11,646
	12	9,526	44	20	9,684
1968-9	4	13,557	50	14	13,766
	6	13,275	58	18	13,466
	8	12,448	54	19	12,656
	10	11,644	43	19	12,091
	12	9,822	44	20	10,024
1969-70	4	14,193	50	14	14,225
	6	13,713	58	18	13,899
	8	13,338	54	19	13,431
	10	12,630	43	19	12,718
	12	10,591	44	20	10,659
1970-71	4	14,519	46	13	14,575
	6	14,109	54	18	14,195
	8	13,428	50	19	13,436
	10	12,633	43	19	13,246
	12	10,577	40	20	10,813
publishers data	4	638	50	14	
	6	464	51	18	
	8	925	50	17	
	10	1,312	49	18	
	12	790	48	17	

Ohio's statewide testing data is generated from results gathered on individual students, classes, and grades of schools participating in the Ohio Survey Tests Program. No information is reported by Ohio about the populations tested (except for total number), or about the tests being used.

Table 35 reports data between 1965 and 1970 for grades four, six, eight, and ten on the Ohio Survey Tests Program. Although only slight, each grade exhibits a peak period and a dropping off of scores. Grade four peaks in 1967 and then drops off, while grade six has high results in 1965, peaks again in 1967, then drops off. Grades eight and ten exhibit a similar trend. Both have high scores in 1965, then decline gradually each year after that.

Table 35
Mean Raw Scores of 4th, 6th, 8th, and 10th Graders in Ohio on the Ohio Survey Tests Program

Year	Grade	Mean Raw Score	S.D.	50% Raw Score	Number of Subjects
1965	4	34.6	12.4	35	43,670
	6	41.4	10.0	43	39,404
	8	40.3	10.3	42	42,650
	10	41.8	9.8	43	44,096
1966	4	37.9	13.1	41	45,692
	6	37.0	10.6	38	39,337
	8	39.6	10.9	41	44,959
	10	38.6	10.4	40	47,442
1967	4	39.8	12.9	43	67,790
	6	37.8	10.5	39	65,614
	8	38.5	11.2	40	57,341
	10	37.7	10.3	39	50,379
1969*	4	37.6	13.5	40	54,688
	6	36.0	10.7	37	55,369
	8	37.5	11.4	39	61,418
	10	36.9	10.8	39	65,665
1970	4	37.6	13.4	40	52,191
	6	35.8	11.0	37	51,006
	8	37.1	11.6	39	60,782
	10	36.4	11.0	38	57,279

*1968 data not forwarded

New York has a statewide testing program in reading that was established in 1965 providing an annual statewide school-by-school inventory of pupil achievement in reading and arithmetic.

The evaluation program utilizes a special printing of the Metropolitan Achievement Test as well as survey tests developed by the State Educational Department that are based on New York State courses of study. The tests for grades three and six were named in the returned questionnaire: the New York State Elementary School Reading Test (grade three), and the New York Minimum Competency Reading Test (grade six).

Table 36 reports mean raw scores, standard deviations, and percentile ranks for grade three and grade six pupils between 1966 and 1971. The statistical tables containing these scores report that approximately 324,000 third graders and 320,000 sixth graders were tested each year in the evaluation program.

Grade three results indicate a slight, but very steady drop in achievement from 1966 to 1971. Grade six data also indicate a steady drop in achievement with the exception of the 1968 performance. There was a net loss of 0.52 in mean raw score units in grade three, and a net loss of 2.0 mean raw score units for grade six between 1966 and 1971.

Table 36
Mean Raw Score For Third and Sixth Graders in New York on the New York State Elementary School Reading Test and the New York State Minimum Competency Reading Test.

Year	Grade	Mean Raw Score	S.D.	Mean Percentile Rank
	3	31.90	12.27	48
1966	6	41.97	13.90	45
	3	31.82	12.50	48
1967	6	41.71	14.02	45
	3	32.14	12.40	48
1968	6	41.80	13.96	45
	3	31.78	12.57	48
1969	6	40.86	14.20	43
	3	31.51	12.34	47
1970	6	40.18	14.27	41
	3	31.38	12.51	47
1971	6	39.94	14.30	41

New Hampshire reports a statewide testing program that is voluntary in nature. Because of a lack of funds, not all schools participated in the program; when funds were provided by the state, the number of participating schools increased.

In its response to the questionnaire, New Hampshire reports that the Cooperative English Test was given from 1950 to 1971, but that data was "not readily available" for the test before 1959. New Hampshire also reports administration of the Stanford Achievement Test since 1966 across four grade levels. Unfortunately, New Hampshire failed to forward either the Cooperative or the Stanford data.

However, data on the Metropolitan Achievement Test for eighth graders was forwarded. Table 37 reports grade achievement at various percentiles for the years 1959, 1962, 1963, and 1964 on the subtests "reading" and "word knowledge."

Scores for New Hampshire students on the subtest of word knowledge indicate fairly substantial gains for students at the fiftieth percentile and below from 1959 to 1963; these scores begin to drop off somewhat in 1964. However, reading scores at the same percentile show a more steady gain. At each percentile point, New Hampshire students are above the reported national norms for the test.

Table 37

New Hampshire Grade Equivalent Scores on the Metropolitan Advanced Battery: Forms A, B, and C. (Scores reported for subtests of word knowledge and reading only for eighth graders.)

Percentiles		1959 Grade Equivalent	1962 Grade Equivalent	1963 Grade Equivalent	1964 Grade Equivalent	National Norm
Word Knowledge	90th	10.0+	10.0+	10.0+	10.0+	10.0+
	75	10.0+	10.0+	10.0+	10.0+	10.0+
	50	9.1	9.5	9.9	9.5	8.1
	25	6.7	6.7	7.8	7.0	6.0
	10	5.4	5.4	6.0	5.5	5.1
Reading	90	10.0+	10.0+	10.0+	10.0+	10.0+
	75	10.0+	10.0+	10.0+	10.0+	9.9
	50	8.0	8.5	8.5	9.2	8.0
	25	6.0	6.6	6.8	6.8	6.0
	10	4.7	5.3	5.1	5.1	4.7
Number Tested			2,632	2,243	4,287	

Alabama has a statewide testing program which the State Department of Education reports has been in existence since 1959. The program is planned and coordinated by the State Department of Education and requires that all public schools in the state participate.

The Alabama Department of Education responded to the questionnaires used in this study with short summaries of all their test data since 1964. No explanation of the testing program accompanied the data.

Alabama reports reading achievement data in the form of reading vocabulary and reading comprehension raw scores from the California Achievement Tests (edition and forms not named). Table 38 summarizes the reading achievement data from 1964 to 1971 for grades eight and eleven.

Eighth grade vocabulary scores remain fairly stable between 1964 and 1971 while comprehension scores fluctuate slightly, but still exhibit no large differences between those years. Both scores peak between the years 1966 and 1968.

Eleventh grade vocabulary scores exhibit a steady, but very gradual rise between 1964 and 1971. However, eleventh grade comprehension scores fluctuate a great deal, showing no clear trend.

Table 38
Mean Reading Scores for the California Achievement Test for Eighth and Eleventh Graders in Alabama

		Vocabulary			Comprehension			
Year	Grade	Mean	S.D.	National Mean	Mean	S.D.	National Mean	Number Tested
1964-5	8	32.05	13.17	dna	42.50	16.04	dna	61,955
	11	28.42	11.79	dna	40.31	13.91	dna	48,598
1965-6	8	31.97	13.19	-.8	42.83	16.11	-.4	64,520
	11	28.52	12.02	-.5	40.04	14.16	-1.0	49,229
1966-7	8	32.42	13.09	-.7	43.12	15.93	-.4	66,238
	11	28.71	11.98	-.6	40.24	14.25	-1.0	49,818
1967-8	8	32.49	13.08	-.7	43.11	15.85	-.4	66,930
	11	28.99	11.97	-.5	40.14	14.26	-1.0	49,916
1968-9	8	32.0	12.8	-.8	42.0	15.7	-.5	67,765
	11	29.0	12.0	-.5	39.0	14.3	-1.0	51,405
1969-71	8	32.0	12.9	-.8	42.0	15.8	-.5	68,539
	11	29.0	12.0	-.5	39.0	14.1	-1.2	52,621
1970-71	8	32.0	15.8	-.8	42.0	15.6	-.5	63,403
	11	29.0	11.9	-.5	40.0	14.0	-1.0	48,292

Idaho reports a statewide testing program that is voluntary on the part of the schools. Idaho's testing utilizes the Iowa Tests of Educational Development, and the summary of the testing reports grade eleven data between 1960 and 1971. Table 39 depicts data on four subtests, each of which is reading-related, and a "reading average" score beginning with the 1967 data.

For each of the four subtests of the ITED, there appears to be a "peaking" effect somewhere between the years 1963 and 1967, then a general falling off of scores. The average reading score that is first reported for 1966-67 is highest at that time and then drops off each succeeding year.

The last row in Table 39 is a mean score for each subtest for all years reported in the table. This row emphasizes the peaking effect for the middle years and shows that for each subtest, 1970-71 and 1971-72 scores are below the means computed for the twelve year period.

Table 39
Average Standard Scores for Four Subtests on ITED, Grade Eleven, Idaho Students

Year	Reading Social Studies	Reading Natural Science	Reading Literature	General Vocabulary	Average	Number of Students Tested
1960-61	16.6	17.2	16.5	17.0	dna	6,545
1961-62	16.8	17.5	16.6	17.1	dna	6,024
1962-63	17.0	17.7	17.0	17.5	dna	6,685
1963-64	17.3	17.8	17.0	17.7	dna	8,336
1964-65	16.9	17.5	16.5	17.4	dna	9,450
1965-66	16.8	18.2	16.8	18.0	dna	9,580
1966-67	16.8	18.2	16.9	17.9	17.3	10,994
1967-68	16.7	17.9	16.6	17.8	17.1	10,938
1968-69	16.7	18.0	16.6	17.9	17.1	10,252
1969-70	16.4	17.9	16.4	17.7	16.9	10,512
1970-71	16.4	17.4	15.8	17.4	16.5	9,147
1971-72	15.9	17.0	15.4	17.0	16.1	7,060
mean score for all years	16.7	17.7	16.5	17.5	16.8	7,060

The state of Iowa attempted a "Then and Now" study of its achievement data in 1965. This data was compared with data collected in 1940 using the same tests, manuals, and time limits, and for this reason is included in the section of states reporting seven or more years data. These tests were of optimal difficult in 1940 but in 1965 they were much too easy. 38,000 pupils who represented the states as a whole were tested in 1940. A similar sample was drawn for the 1965 comparison.

Table 40 reports the Iowa data by comparing median grade equivalents, and grade equivalents at the tenth and nintieth percentiles, for grades three through eight, for vocabulary and reading comprehension. Thirty-six comparisons are made between 1940 and 1965 achievement; all comparisons show a gain for the 1965 group. Differences range from two tenths of a grade to well over a full grade level.

Table 40

Comparisons of Median Grade Equivalent Scores and 10th and 90th Percentile Scores on the Reading and the Vocabulary Subtests of the Iowa Every Pupil Test of Basic Skills Between 1940 and 1965 for the State of Iowa, Grades 3-8.

	Comparison of Median Grade Equivalents		
Grade	Year	Reading	Vocabulary
	1965	43.7	41.6
3	1940	37.6	38.3
	Diff	6.1	3.3
	1965	55.4	50.7
4	1940	46.8	45.6
	Diff	8.6	5.1
	1965	64.5	60.4
5	1940	56.8	56.3
	Diff	7.7	4.1
	1965	76.2	76.7
6	1940	64.4	64.3
	Diff	11.8	12.4
	1965	85.3	84.0
7	1940	76.0	76.1
	Diff	9.3	7.9
	1965	93.7	91.0
8	1940	86.0	84.1
	Diff	7.7	6.9
Mean Difference		8.50	6.60

Table 40 (Cont'd)

Comparisons of Median Grade Equivalent Scores and 10th and 90th Percentile Scores on the Reading and the Vocabulary Subtests of the Iowa Every Pupil Test of Basic Skills Between 1940 and 1965 for the State of Iowa, Grades 3-8

Comparison of 10th Percentile Scores				Comparison of 90th Percentile Scores			
Grade	Year	Reading	Vocabulary	Grade	Year	Reading	Vocabulary
3	1965	28.9	27.5	3	1965	69.0	56.2
	1940	23.8	25.3		1940	55.4	53.0
	Diff	5.1	2.2		Diff	13.6	3.2
4	1965	35.9	36.1	4	1965	79.0	70.1
	1940	31.2	34.0		1940	70.1	66.6
	Diff	4.7	2.1		Diff	8.9	3.5
5	1965	41.7	43.3	5	1965	88.6	80.9
	1940	38.3	39.8		1940	79.6	79.8
	Diff	3.4	3.5		Diff	9.0	1.1
6	1965	53.0	53.8	6	1965	99.8	92.8
	1940	44.2	46.1		1940	88.6	85.6
	Diff	8.8	7.7		Diff	11.2	7.2
7	1965	61.5	59.7	7	1965	106.1	97.9
	1940	51.5	55.3		1940	98.0	92.9
	Diff	10.0	4.4		Diff	8.1	5.0
8	1965	67.6	69.6	8	1965	11.5	106.3
	1940	60.0	63.5		1940	104.2	101.3
	Diff	7.6	6.1		Diff	7.3	5.0
Mean Difference		6.60	4.33			9.68	4.17

West Virginia has had a statewide testing program since 1962, and over the years has modified and expanded it to include several different grade levels. A testing committee comprised of school personnel meets annually to evaluate policies and procedures concerning the program.

The first statewide testing in West Virginia was done in 1961-1962 with twelfth graders utilizing the *Sequential Tests of Educational Progress*. Table 42 depicts the twelfth grade data for two years. In 1963, the state began testing ninth and eleventh graders rather than twelfth graders utilizing the same test. Six years of data are reported for these grades in Table 42.

West Virginia also reports data on the *Stanford Achievement Tests* (Form W) for grades three and six. In 1957, a selected sample of 2,048 sixth graders were tested with the *Stanford Tests*; this sample has since been called the Feaster Study. Beginning in 1962, data from the *Stanford Tests* for grades three and six are reported in Table 41 , including the Feaster Study data.

West Virginia's testing policy underwent a change in the school year 1970-71. The *STEP* and *Stanford Tests* were discarded and since that time, the *Educational Development Series* has been used in grades three, six, nine, and eleven.

The data in Table 41 show for grades nine and eleven a peaking in the years before and including 1966-7, then the scores drop off somewhat. Grade six data demonstrate the same thing with the "word meaning" subtest, but shows no real pattern in regard to the subtest "paragraph meaning." Grade three scores appear to be rising gradually for both subtests.

Table 41
Third and Sixth Grade Reading Subtest Scores From *Stanford Achievement Test*
West Virginia

		Word Meaning			Paragraph Meaning		
Year	Grade	Mean	S.D.	Number Tested	Mean	S.D.	Number Tested
1957*	6	5.8	dna	2,048	5.1	dna	2,048
1962-63	6	6.2	dna	38,067	6.2	dna	38,067
1964-5**	3	3.15	dna	dna	3.24	dna	dna
	6	6.09	dna	dna	6.12	dna	dna
1965-6**	3	3.00	dna	dna	3.08	dna	dna
	6	5.3	dna	dna	5.6	dna	dna
1966-7	3	3.28	1.00	35,208	3.35	1.04	32,215
	6	5.76	1.62	33,765	6.12	1.85	33,738
1967-8	3	3.30	1.01	35,104	3.39	1.07	35,091
	6	5.77	1.61	34,958	6.14	1.85	34,957
1968-9	3	3.32	1.02	32,991	3.39	1.06	32,983
	6	5.71	1.57	33,998	6.05	1.82	33,989

* Feaster Study
**reported in states medians, not means

Table 42
STEP Reading Scores for Grades 9, 11, and 12
West Virginia

Year	Grade	Reading Mean	S.D.	Number Tested
1963-64	9	273.8	17.7	35,199
	11	287.5	17.2	29,588
1964-65	9	274.9	dna	dna
	11	287.7	dna	dna
1965-66	9	275.0	17.6	34,869
	11	287.6	17.7	28,473
1966-67	9	275.2	17.6	33,996
	11	287.4	17.8	28,078
1967-68	9	274.2	18.1	33,228
	11	286.4	16.7	27,169
1968-69	9	272.8	18.7	28,974
	11	286.4	18.5	26,425

Year	Grade	Standard Mean	S.D.	National Mean	Number Tested
1961-62	12	290.5	dna	293.7	19,893
1962-63	12	291.0	16.9	dna	19,895

Independent Schools Data

Reading achievement data from independent schools across the country comprises the next section of this chapter. Since 1931, independent schools have engaged in a testing program in which schools participated on a voluntary basis. It is difficult to determine what percentage of the total school enrollment is reflected in this set of data, since participation in the testing program is voluntary. In addition, a complete sample description is not available.

However, the schools that do report data are considered to be representative of independent schools. Tables 43 through 47 and Figures 1 through 3 report achievement data for independent schools between the years 1934 and 1971.

Independent school data up to and including 1964 are available in a series of yearly publications. Presently, the Educational Records Bureau at the Educational Testing Service (ETS) maintains testing data since 1964. Since data between 1964 and 1971 were not available, the Educational Records Bureau was contacted; Dr. Jules Godison, it was learned, was in charge of that data. After repeated inquiries, project personnel were unable to obtain this data. However, achievement data for 1970-71 were forwarded and are reported in Table 45.

A number of achievement tests are utilized by independent schools across the time period being investigated, and most report data in median grade equivalents. Since different forms of the various tests are used from year to year, certain cautions in interpreting the data are necessary. In addition, data for 1970-71 are reported on the Stanford Achievement Tests across seven grade levels in much the same manner as data in Table 44. However, later achievement data reflect many changes and revisions in the tests as well as changes in the subtest format of the Stanford battery, making interpretation particularly difficult.

Figures 1 through 3 are an attempt to graphically represent data on the Cooperative English Test across at least a thirteen year period on identical forms of the test. It was felt that this representation of achievement data would add coherence to the mass of yearly scores and would be a relatively unbiased way to interpret at least portions of the achievement data that were collected.

Description of Achievement Data

Table 43 reports raw scores collected by the Independent School Survey in grades seven through twelve between 1940 and 1964 on the Cooperative English Test, reading comprehension subtest. This test is still being utilized in the testing program, but uses a different method for deriving scores so that little would be gained by reporting 1970-71 data which are available. Portions of the 1940-1964 data are also depicted in a series of graphs in Figures 1 though 3; data reported in the graphs (1) are from the same forms of the test and (2) cover at least a thirteen year span.

Generally, all Cooperative test data indicate an upward trend in reading achievement data between 1940 and 1964. It should be noticed that 1940 scores from Form Q are a great deal higher than most of the subsequent scores for the next ten years. Form Q is not used in any other year indicating a possible lack of equivalency between Form Q and other forms of the Cooperative test.

Figure 1 represents scores for seventh through twelfth graders on the Cooperative test, Form Y, for the years 1949, 1958, and 1962. A steady increase in reading achievement in grades seven through eleven is evidenced, while achievement in grade twelve appears to level out between 1958 and 1962.

Figure 2 depicts scores for seventh through twelfth graders on the Cooperative test, Form RX, for the years 1950, 1955, and 1963. Data for eighth graders show a steady rise in reading achievement; seventh, ninth, tenth, and eleventh grade data demonstrate a drop in achievement between 1950 and 1955, then a rise that exceeds the 1950 levels. Grade twelve data exhibit the drop in 1955, then a rise to almost the same level attained in 1950.

Figure 3 displays scores for seventh through twelfth graders on the Cooperative test, Form T, for the years 1946, 1951, 1956, 1960, and 1964. Again, the same pattern developes with reading achievement dropping off in the middle years from previous levels, then steadily rising, and finally exceeding the levels attained in the earlier years. As in Figures 1 and 2, twelfth grade achievement in reading dips down in the middle years, then rises but does not exceed the levels attained in the earlier years.

Taken totally, the data reported in Table 43 and Figures 1 through 3 on the Cooperative English Test, reading comprehension subtest, indicate some fluctuation, but a fairly steady rise in reading achievement. At each grade level, scores toward the end of the period generally exceed beginning scores, with the exception of grade twelve data which appears to remain relatively stable throughout the entire period.

Table 44 reports median grade equivalent scores for second through eighth graders in independent schools on the Stanford Achievement Battery, average reading, between 1949 and 1963. Scores remain relatively stable between 1949 and 1953, then appear to rise steadily until the end of the period. This is interesting in light of the general decline of scores on the Cooperative English Test during the middle 1950's evidenced in Table 43 and Figures 1 through 3. Generally, scores for the end of the period exceed scores for the beginning of the period by .5 to 1.5 grade equivalents. Table 45 reports Stanford scores on subtests of word meaning and paragraph meaning at the same grade levels for 1970 through 1971. Neither of the forms used in 1970 or 1971 were utilized between 1949 and 1963, making comparisons difficult.

Table 46 reports median grade equivalents for first and second graders in independent schools between 1949 and 1963 on the Metropolitan Achievement Test. A fairly steady rise in reading achievement is demonstrated for this period, with more recent scores exceeding the earlier scores by approximately .5 grade equivalents. However, it should be noted that the forms used in the latter half of the period were not used during the years 1949 to 1957, again making generalizations about gains in achievement suspect.

Finally, Table 47 reports median grade equivalents on the Metropolitan Achievement Battery, average reading, for first through eighth graders during the years 1934 to 1948. Data for grades one, two, three, six, and eight fluctuate somewhat, but remain relatively stable over the period. Grade seven data demonstrates a nominal gain in achievement, while grade four and five data indicate a steady and substantial rise in reading achievement.

Table 43
(Independent Data: Raw Scores) Cooperative English Test, Reading Comprehension 1940-1964, Grades 7-12

Year	Form	Grade 7		Grade 8		Grade 9		Grade 10		Grade 11		Grade 12	
		Median Average Reading	Number of Subjects	Median Average Reading	Number of Subjects	Median Average Reading	Number of Subjects	Median Average Reading	Number of Subjects	Median Average Reading	Number of Subjects	Median Average Reading	Number of Subjects
1940	Q	dna	dna	50.4	330	58.7	1218	62.9	1404	66.5	1629	70.4	1607
1941	R	45.8	209	51.1	669	54.1	1453	56.7	1586	60.5	1808	64.3	2040
1942	S	45.8	486	51.3	999	54.0	1649	55.8	1740	59.1	1931	62.5	1942
1944	R	47.1	469	50.2	998	53.7	1947	55.9	1974	59.2	2006	63.0	1527
1945	S	45.6	480	50.0	1015	52.3	2091	55.4	2206	58.9	2242	62.8	1860
1946	T	46.4	596	50.5	1103	53.3	2114	55.0	2203	58.5	2338	61.9	2192
1947	R	45.3	493	49.0	1022	52.2	2015	54.7	2102	57.7	2563	61.2	2421
1948	S	45.4	462	49.8	970	52.5	1903	54.8	1988	58.6	2181	61.9	2241
1949	Y	45.8	516	50.8	1162	52.8	2017	55.2	2032	58.8	2250	61.8	2186
1950	RX	46.2	558	49.7	1072	52.8	2108	55.2	2015	58.5	2128	62.0	2037
1951	T	46.1	463	50.5	1090	53.2	1811	55.6	1816	58.4	1893	60.6	1722
1952	S	44.2	419	50.2	1089	52.1	2138	54.6	2004	58.2	2314	60.4	2113
1953	Z	47.0	661	53.0	1381	55.8	2371	55.5	2207	58.4	2327	61.4	2222
1955	RX	46.0	860	50.2	1863	52.3	2786	54.1	2575	57.3	2690	60.8	2322
1956	T	46.6	934	51.6	1914	53.3	2804	55.2	2606	58.1	2548	60.5	1992
1957	Z	46.2	1077	50.8	1956	54.6	3198	55.8	2850	59.7	2684	62.6	1909
1958	Y	46.8	1200	50.9	2151	54.1	3530	57.0	3529	59.6	2940	62.7	2169
1960	T	47.5	2071	52.0	2815	55.2	3631	57.0	3643	59.4	3533	61.7	2728
1961	Z	46.8	1756	51.6	2958	54.7	3574	57.7	2939	60.3	2759	62.8	2143
1962	Y	47.7	2034	52.0	2942	54.9	3756	57.6	3524	60.0	2888	62.2	2277
1963	RX	47.9	2001	52.3	3120	55.4	3737	57.2	3470	60.5	3073	62.6	1966
1964	T	48.2	2162	52.6	2989	56.2	3707	57.6	3090	60.4	2918	62.3	1882

FIGURE 1

Median raw scores for seventh through twelfth graders in Independent Schools on the Cooperative English Test, reading comprehension subtest (Form Y) for the years 1949, 1958, and 1962.

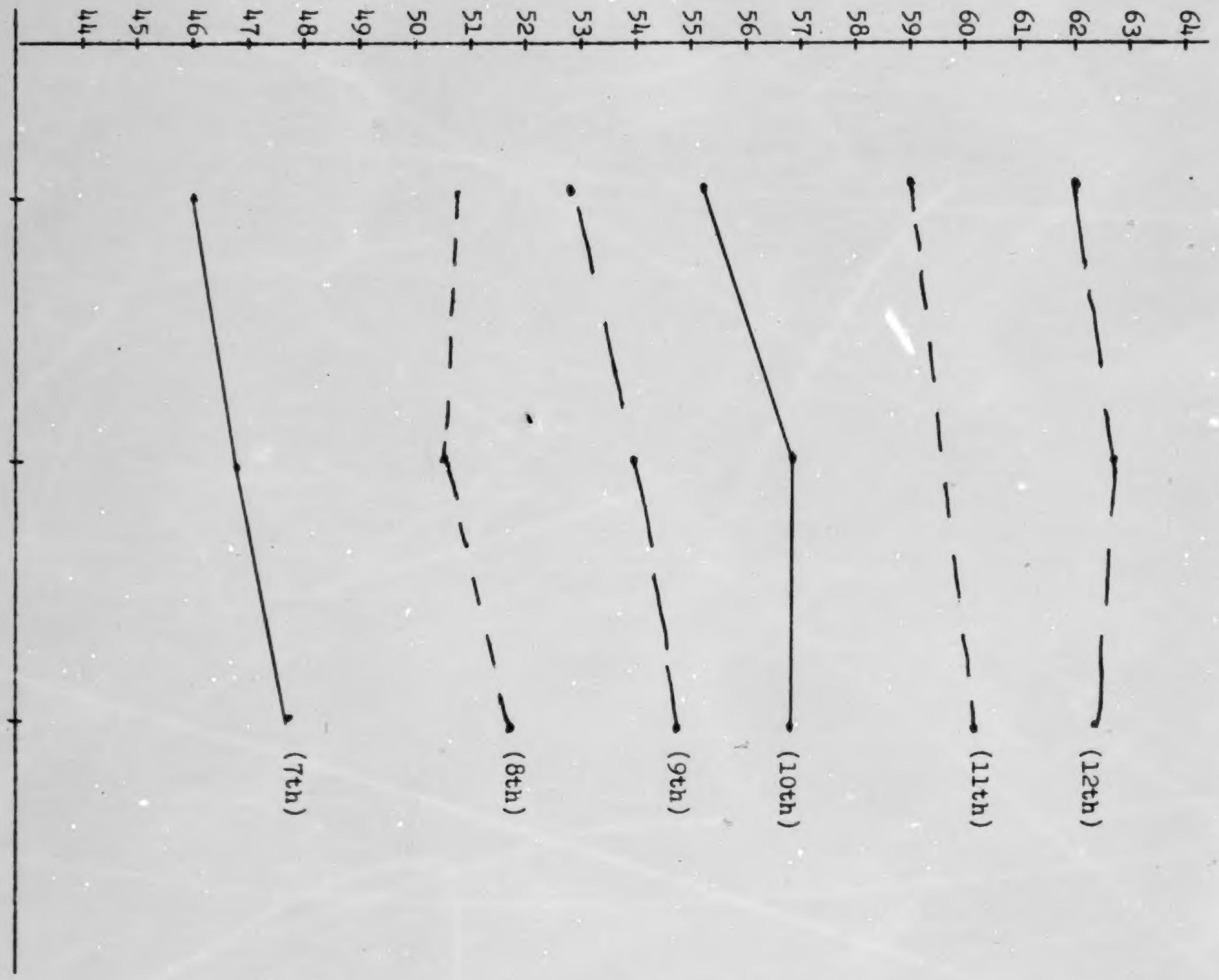

FIGURE 2

Median raw score for seventh through twelfth graders in Independent Schools on the Cooperative English Test, reading comprehension subtest (Form RX) for the years 1950, 1955, and 1963.

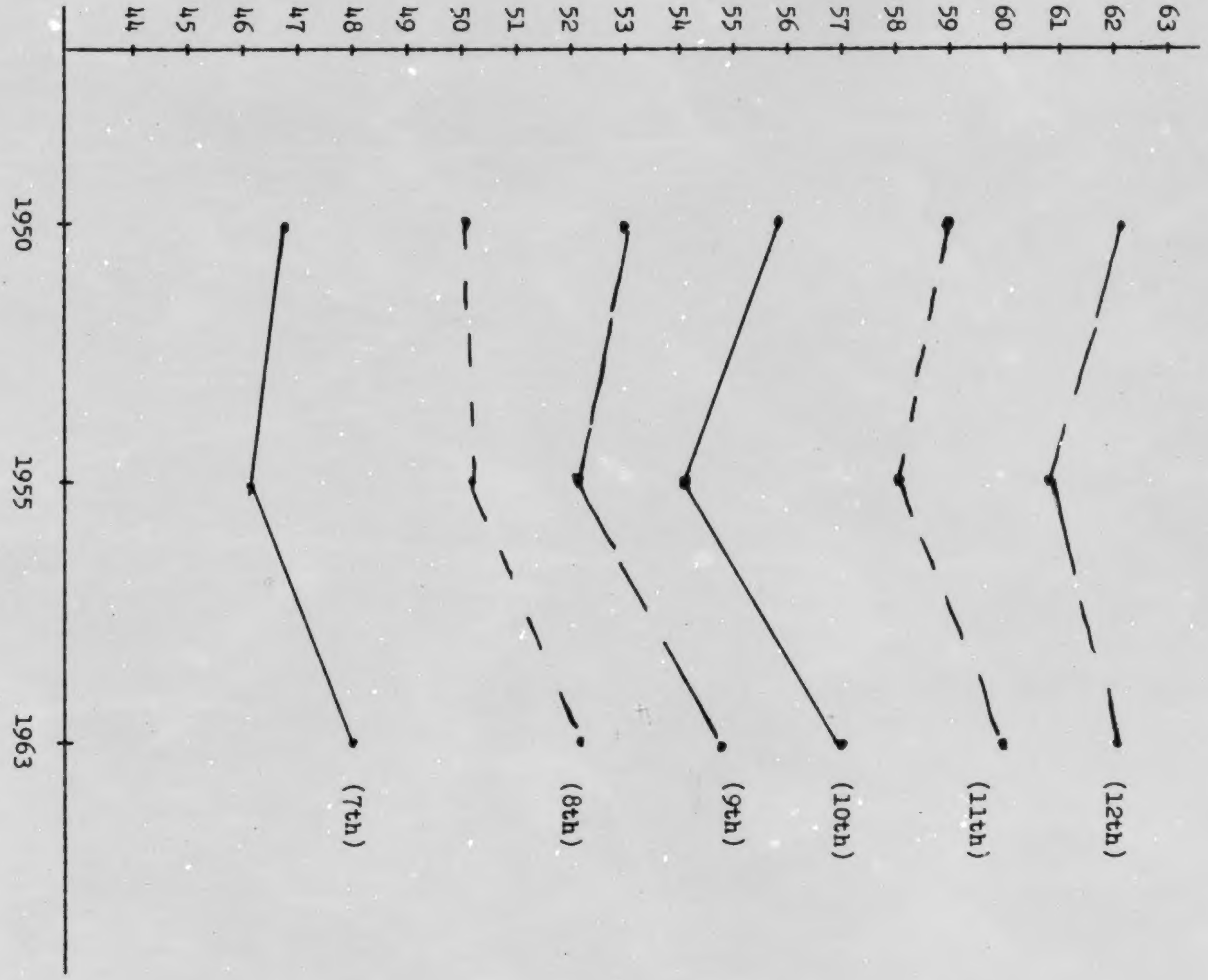

FIGURE 3

Median raw scores for seventh through twelfth graders in Independent Schools on the Cooperative English Test, reading comprehension subtest (Form T) for the years, 1946, 1951, 1956, 1960, and 1964.

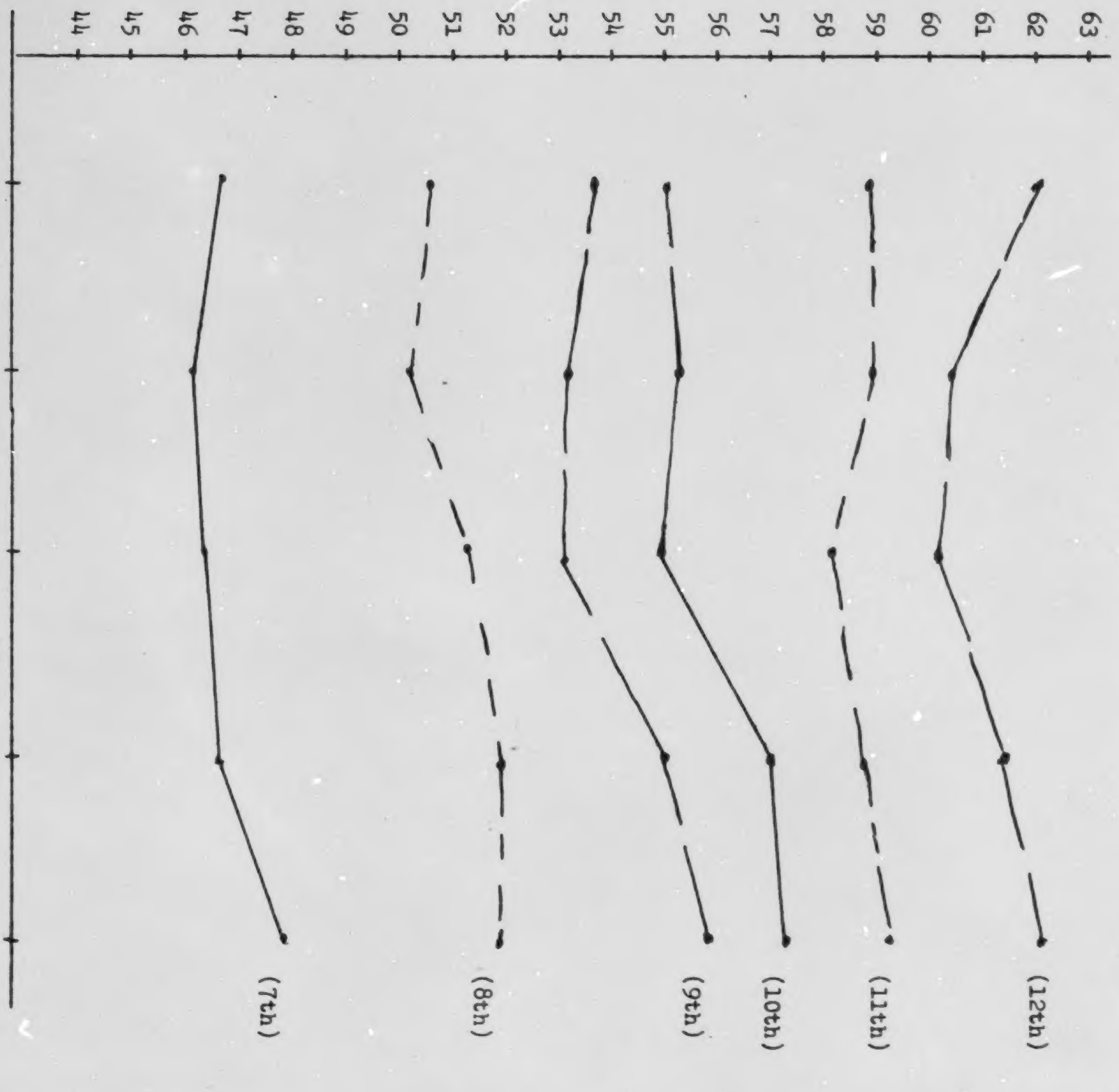

Table 44

Stanford Achievement Battery, Average Reading Subtest
Median G.E. Scores for Second Through Eighth Graders
Between 1949 and 1963

		Grade 2		Grade 3		Grade 4		Grade 5	
Year	Form	Average Reading	Number of Subjects	Average Reading	Number of Subjects	Average Reading	Number of Subjects	Average Reading	Number of Subjects
1949	G	3.1	1122	4.4	1127	5.7	1193	7.1	1248
1950	D	dna	dna	4.5	1463	5.7	1550	7.2	1501
1951	F	dna	dna	4.4	1558	5.5	1708	7.1	1720
1952	H	dna	dna	4.5	1557	5.6	1834	7.0	1926
1953	G	dna	dna	4.4	1667	5.7	1896	7.2	2014
1955	M	3.7	1452	4.6	2031	6.0	2058	7.7	2181
1956	F	3.7	1573	4.9	2074	6.4	2273	7.9	2259
1957	H	3.7	1923	4.8	2381	6.1	2755	7.5	2890
1958	G	3.7	2177	5.1	2598	6.3	2795	7.8	2944
1960	M	4.2	1769	5.1	3224	6.4	3421	8.0	3690
1961	M	4.2	2485	5.3	3454	6.7	3567	8.1	3814
1962	L	4.2	3000	5.2	3579	6.6	3946	7.9	3982
1963	J	4.1	3104	5.3	3618	6.6	3908	8.0	4333

Table 44 (Cont'd)

Stanford Achivement Battery, Average Reading Subtest Median G.E. Scores for Second Through Eighth Graders Between 1949 and 1963

Year	Form	Grade 6		Grade 7		Grade 8	
		Average Reading	Number of Subjects	Average Reading	Number of Subjects	Average Reading	Number of Subjects
1949	G	8.3	1354	9.6	1024	11.0	712
1950	D	8.4	1640	9.9	1442	10.8	941
1951	F	8.3	1700	9.6	1486	10.7	908
1952	H	8.1	1997	9.3	1553	10.2	921
1953	G	8.3	2143	9.6	1796	10.5	1079
1955	M	9.0	2430	10.3	2315	11.0	1262
1956	F	8.9	2565	10.3	2311	11.2	1319
1957	H	8.8	2974	10.0	2528	10.8	1451
1958	G	9.3	3177	10.5	2486	11.3	1616
1960	M	9.4	3877	10.7	3039	11.3	1850
1961	N	9.3	4169	10.8	2989	11.6	1800
1962	L	9.2	4386	10.4	3010	11.2	1602
1963	J	9.6	4496	10.8	3270	11.4	1805

Table 45

Stanford Achievement Tests (Primary, Intermediate, and Advanced) Word and Paragraph Meaning Subtests; Median Grade Equivalent Scores for Second Through Eighth Graders in Independent Schools for 1970 and 1971.

		Grade 2			Grade 3			Grade 4			Grade 5		
		Word Meaning	Paragraph Meaning	Number of Subjects	Word Meaning	Paragraph Meaning	Number of Subjects	Word Meaning	Paragraph Meaning	Number of Subjects	Word Meaning	Paragraph Meaning	Number of Subjects
1970	W	3.78	3.71	4380+	4.87	4.83	5165+	6.70	6.57	5059+	7.04	7.24	5839+
1971	Y	3.69	3.71	3655+	4.74	4.70	3879+	6.63	6.27	4232	7.37	7.31	4386

		Grade 6		Grade 7		Grade 8	
		Paragraph Meaning	Number of Subjects	Paragraph Meaning	Number of Subjects	Paragraph Meaning	Number of Subjects
1970	W	8.83	6217	10.42	3665	10.84	2921
1971	Y	8.39	3279	10.22	2846	10.72	1741

Table 46

Metropolitan Achievement Test, Average Reading, 1949-1963 (Test dropped after 1963) Median Grade Equivalents for First and Second Grade Independent School Pupils

Year	Form	Grade 1 Median Average Reading	Grade 1 Number of Subjects	Grade 2 Median Average Reading	Grade 2 Number of Subjects
1949	T	2.2	1066	dna	dna
1950	R	2.2	1167	3.6	1355
1951	S	2.2	1154	3.7	1310
1952	T	2.3	1108	3.6	1249
1953	R	2.3	1268	3.7	1309
1955	T	2.0	1650	3.1	435
1956	R	2.4	dna	3.8	dna
1957	R	2.4	dna	4.0	dna
1958	Prim.	2.5	2457	3.9	355
1960	A	2.3	3063	3.9	1401
1961	B	2.4	3075	4.0	833
1962	C	2.5	3197	4.0	505
1963	A	2.6	3323	4.2	348

Table 47

Metropolitan Achievement Test; Independent Data,
Average Reading 1934-1948
Grades 1-8

Year	Form	Grade 1		Grade 2		Grade 3		Grade 4	
		Average Reading	Number of Subjects	Average Reading	Number of Subjects	Average Reading	Number of Subjects	Average Reading	Number of Subjects
1934	B	2.3	253	3.8	279	5.1	305	5.9	433
1935	C	2.0	188	3.4	288	4.8	272	5.6	331
1937	B	2.1	491	3.7	651	4.9	397	6.2	513
1940	C	1.9	809	3.4	1107	5.4	575	6.4	747
1941	D&A	2.3	424	3.7	410	5.2	528	6.4	688
1942	E&B	2.1	429	3.8	458	5.2	543	6.3	660
1944	B	2.2	547	3.6	626	5.1	715	6.3	813
1945	C	2.0	654	3.6	789	5.1	827	6.3	898
1946	A&D	2.2	857	3.6	959	5.1	1071	6.2	1183
1947	B	2.3	1095	3.7	1091	5.0	1208	6.1	1304
1948	R	2.2	907	3.6	822	5.1	882	6.5	972

Table 47

Metropolitan Achievement Test: Independent Data

Average Reading 1934-1948

Grades 1-8

(Cont'd)

Year	Form	Grade 5		Grade 6		Grade 7		Grade 8	
		Average Reading	Number of Subjects	Average Reading	Number of Subjects	Average Reading	Number of Subjects	Average Reading	Number of Subjects
1934	B	6.8	614	8.4	633	9.0	769	9.7	330
1935	C	6.3	486	7.6	622	8.2	652	8.9	502
1937	B	7.1	623	8.6	761	9.2	892	9.6	667
1940	C	7.3	894	8.6	1006	9.2	1048	9.8	731
1941	D&A	7.3	811	8.8	953	9.5	868	10.0	584
1942	E&B	7.2	784	8.6	876	9.4	773	9.9	465
1944	B	7.3	973	8.6	1083	9.2	1106	9.6	685
1945	C	7.2	970	8.4	1107	9.1	1006	9.7	750
1946	A&D	7.2	1252	8.6	1383	9.3	1183	9.7	696
1947	B	7.2	1307	8.5	1443	9.1	1381	9.5	826
1948	R	7.8	991	9.1	1108	10.3	971	10.8	787

Summary

As was the case with the school system data, the changes in tests employed and the grades tested makes it difficult to draw any definitive conclusions concerning reading growth. Some of the most reliable data in this chapter are reported by the state of Iowa and by the Independent School Survey scores. In both cases we have long-term information over roughly 25 years. The two sets of information reinforce each other and the major conclusion to be drawn is that between 1940 and 1965 there was a steady improvement in reading achievement. Overall, the 1965 students outscored their 1940 counterparts significantly.

After the middle of the last decade, the picture becomes less clear. While some states show little change in either direction, overall there seems to exist a slightly negative trend after 1965. The losses are typically slight, but they appear steady and genuine. In view of the fact that data for so few states were suitable for inclusion and because we are dealing with a relatively short span of years, it seems premature to speak of a general, nation-wide decrease in reading test performance in the past five or ten years.

The most conclusive statement that can be made is that the children of the present are reading better (or at least scoring higher in tests) than children of twenty or more years ago. Moreover, these differences appear to be quite significant.

Conclusion

As stated in the Introduction to this volume, this study had two purposes:

a. First, it was an attempt to make available as wide a data base on shifts in the literacy skills of this nation's youth as could be collected within the constraints of the time and budget allotted. It was hoped that this study would provide a data base on which definitive conclusions concerning the reading ability of today's students compared to those of the past could be made.

b. Secondly, the study attempted to document the manner in which school systems, states and other authorities have attempted to assess reading growth trends. It was assumed that such assessment would be a natural accompaniment of our ever increasing investments in reading education.

We would be less than candid if we suppressed the fact that at the outset we had hopes, against intuitions and beliefs gained from our collective experience in and study of the reading field, to be able to distill from all the data we were to collect some rather firm judgements about positive or negative trends in reading achievement over the two decades we were especially interested in: 1950-1970. It must be stressed, however, that our scepticism regarding the existence of hard data which would allow such firm judgements motivated this study in the first place.

What conclusions, then, can be drawn from the information gathered and from the problems experienced in gathering the data?

Our most positive conclusion is that it is extremely difficult for anyone interested in evaluating trends in literacy to obtain adequate data. Such a conclusion is not to be taken lightly. When one considers the many statements that are constantly being made about the "declining literacy rate" of the nation's children, it would be assumed that clear evidence to document such conclusions is generally available. This was definitely not our finding.

To be sure some school districts do publish their test scores annually. However, that information has two basic shortcomings: in most cases it can be compared with data from only a few preceding years, but more importantly, fluctuations in the characteristics of pupil populations in those school districts make evaluation of such data especially hazardous.

From our school district survey we had hoped to partially eliminate the uncertainty associated with changes in student populations by resorting to gathering data on a large number of school systems of various kinds: rural and urban, stable and growing, and so on. We definitely did not succeed in that effort. We have been able to gather too little data from too few school systems. Of the 100 systems contacted only 45 responded to our questionnaire (even after prodding), 40 of those reported that they conducted annual testing, 25 had data reports of some kind available, 12 sent us their reports and the data of only 6 systems extended over 3 years or more, the established cut-off point. It is clear that even with perfect data, the final sample is not representative of school systems throughout the country. This is particularly bothersome because of the necessity for a variety of school systems to be represented: among others those which lost students from advantaged backgrounds because of a trek to suburbia and those which gain such students.

The problem of interpretation of our school system data is compounded, however, since the data itself is far from perfect. In the discussion of each individual set of data specific shortcomings were detailed. In general, in addition to the lack of information about changes in the type of student tested, the most troublesome issues were: changes in tests;

changes in test forms, often unmentioned; changes in kinds of scores reported; and changes in the time of the year when the tests were administered.

In general, the data from the states is slightly more interpretable than that of the school districts. First, more states have collected test data for longer periods of time. Iowa is, of course, an excellent example.

In addition, shifts in population tend to be less pronounced for entire states than for individual school districts; this is of particular importance in states such as Alabama which reported average scores based on testing in all of its public schools. Nevertheless, even this data does not allow one to draw conclusions except with the utmost care and substantial ambivalence.

Leaving the information gathered in the review of literature aside for a moment, it is clear that the safest and least controversial conclusion to be drawn from the data presented in the preceding chapters is that it does not allow any absolute conclusions about the fate of literacy skills in America to be drawn. Yet, we feel that in the face of unsubstantiated claims of drastic decline in literacy skills, it is legitimate and even necessary to state tentative conclusions from the data. We do this in full knowledge of the high probability of errors of judgement. Partial and difficult to interpret information may not always be preferable over the absence of any information; in this case, we feel it is.

In Chapter I we presented evidence, gleaned from various sources in the literature that up to the late fifties there was little cause to believe that skill in reading was on the decline. From the studies cited and from the analyses provided rather the opposite seems to be true. Children tested at the later of the two dates involved in these "then-and-now" studies tended to score significantly higher than their predecessors. This is true despite the fact that during the period covered by these studies social promotion became more and more in vogue, with the consequence that there existed a less select student body at any particular grade level when compared to earlier years. Also, as Gates (1961) pointed out quite cogently the student population was becoming younger at all grade levels. Both of these facts would be reasons to hypothesize a loss in reading achievement if all other things were equal. However, all other things were not equal, as they never are, and reading scores, as reported in most of the studies, appear to favor the groups tested now rather than then.

From considering the school system data, the state data and the data from the independent schools, with all the constraints on legitimate interpretation mentioned above, we have gained the impression that the tendency for scores to hold stable or, even to increase slightly but significantly, extended well into the sixties. Up to 1965 we see, overall, little evidence of lowered reading achievement as represented by test scores. After the middle of the past decade, we are even less certain than about the preceding years. However, there appears, and we must stress the extremely tentative nature of this statement, a slight decline in the scores after 1965. The decline is not general, and there are many exceptions; but in toto, the conclusion supported by the data indicates less stability or "upswing" than in the period preceding the middle sixties.

From the information we have presented both in regard to test scores and in regard to our procedures, it is clear that despite a multi-million dollar per year testing business, surprisingly few longitudinal and easily accessible records on the performance of children exist. Though one can easily find cabinets full of test scores in virtually every school system in this country, these sources generally turn out to contain little information relevant to the issue of the longitudinal monitoring of performance.

This is not too surprising. In the past, the prime rationale for administering survey tests of reading was to obtain information on individual students. Testing was done foremost for the purpose of monitoring the progress of individual children. If the need to keep track of long term changes in performance at the school or school system level had been the overriding concern of the personnel who makes decisions about the testing program, it is probable that the countless instances of changes in the testing programs (tests, forms, grades tested, etc.) that can be documented in nearly all school systems simply would not have occurred.

Currently, a number of factors seem to insure that the longitudinal monitoring function at the school system, state and national level will be executed much more vigorously during the final quarter of this century. There is a growing realization that standardized survey reading tests may be much better suited to providing information about the performance level of aggregates of students than about individual students. Furthermore, a sense of education as an economic enterprise is emerging as evidenced by the appearance of such concepts as "accountability", "cost-benefit analysis", etc. in the educational literature. Public interest in how well schools are performing their mission is becoming ever more focused and sophisticated. In response to these and related developments, efforts are being mounted which will indeed allow a much more valid and reliable monitoring of how well Americans read than was possible in the past. We refer, of course, to such efforts as the National Assessment of Educational Progress and to the various state assessment programs now being created. Short of physically searching the records of individual students, classrooms and schools, it seems nearly impossible to obtain definitive evidence regarding such a simple question as: "Are children reading better or worse now, than 10 or 20 years ago?" Certainly this situation dramatically emphasizes the necessity for these newly created assessment programs to succeed.

The history of education is replete with examples of older generations decrying the decay in competence of youth. Even six thousand years ago a frustrated Egyptian teacher noted that the young people of his day not only were less capable of learning but less willing as well. Unfortunately, subjective appraisal of trends in achievement, reading achievement included, is often far from reliable and/or valid. At least, as a minimum condition, such judgment should be complemented by more objectively gathered data. We believe that our efforts have shown that the current data base on trends in reading achievement is extremely difficult to access, contains many flaws which make interpretation difficult or impossible, has been irregularly maintained and hardly allows for any sure and sweeping generalizations about gains or losses across the years to be made.

Finally, we believe that from an interpretation of the information we were able to gather, we would conclude first, that there is no reason for en masse pessimism; secondly, that the gradual improvement in reading competency over the four decades prior to 1965 may have lessened or halted; and finally, over the last ten years there may have been a very slight decline in reading achievement. Of all our hesitant interpretations, we feel least certain about the last one.

One of the interesting hobbies we have engaged in during the past several years in which we have been compiling these data, is to write to all those who make statements about the declining literacy in the United States. We have done this first to determine if those who are making such statements would direct us to their data sources; and secondly, we wrote to them because we felt they had little evidence on which to base their claims. We are now convinced that anyone who says that he knows that literacy is decreasing is a very unsure person. Such a person is at best unscholarly and at worst dishonest.

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Appendices

TEST CODES

Code #	Name of Test
01	American School Achievement Tests: Part 1, Reading
02	American School Reading Tests
03	Buffalo Reading Test for Speed and Comprehension
04	California Reading
05	Comprehensive Reading Scales
06	Cooperative English Tests--Reading Section
07	Davis Reading Test
08	Developmental Reading Tests
09	Diagnostic Reading Tests
10	Elementary Reading: Every Pupil Achievement Test
11	Emporia Elementary Reading Test
12	Emporia Intermediate Reading Test
13	Emporia Junior High School Reading Test
14	Emporia Primary Reading Test
15	Emporia Silent Reading Test
16	Gates Basic Reading Tests
17	Gates-MacGinitie Reading Tests
18	High School Reading Test: National Achievement Tests
19	Iowa Tests of Basic Skills
20	Iowa Silent Reading Tests
21	Lee-Clark Reading Test
22	Metropolitan Achievement Tests: Reading
23	Monroe's Standardized Silent Reading Test
24	Nelson-Denny Reading Test
25	Nelson Reading Test

TEST CODES (cont.)

Code #	Name of Test
26	Primary Reading: Every Pupil Achievement Test
27	Public School Achievement Tests: Reading
28	Reading Comprehension Test: National Achievement Tests
29	SRA Achievement Test
30	Sequential Tests of Educational Progress: Reading
31	Stanford Achievement Test: High School Reading Test
32	Stanford Achievement Test
33	Survey of Primary Reading Development
34	Tests of Academic Progress: Reading
35	Traxler High School Reading Test
36	Traxler Silent Reading Test
37	Not Specified

SOURCE IDENTIFICATION QUESTIONNAIRE

1. Has a statewide achievement testing program been available to the schools of your state during a major proportion of the 20-year period 1950 through 1970?

   ☐ yes
   ☐ no

2. If so, by whom is it planned and coordinated?

   ☐ State Department of Education
   ☐ A college or university in the state
   ☐ Other agency or institution

   Note: If the second or third box is checked, please give the name and address of the office, department firm, or agency where it is handled:

   ____

   ____

   Also, please give the name of the program director if available:

   ____

3. Has it been and is it now a requirement that all public schools in the state participate in the achievement testing program?

   ☐ yes
   ☐ no (If no, please explain): ____________________

   ____

   ____

4. The following item has been designed to determine the years and grades in which a particular standardized reading achievement test (either as a separate test or as part of an achievement battery) was administered statewide. First, please check each year in which such tests were given. Second, in the box under the appropriate grade numeral and opposite the appropriate year, place the code number of the test which was given. On the attached sheet, you will find a list of the test names and corresponding code numbers. If the name of the test used does not appear on the list, use the code number "00" and write the name of the test on the blank lines provided at the end of item 4 above.

EXAMPLE:

	GRADES											
Year	1	2	3	4	5	6	7	8	9	10	11	12
☐ 1970	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
☒ 1971	( )	(04)	( )	( )	( )	(04)	( )	( )	( )	(31)	( )	( )
☒ 1972	( )	(04)	( )	( )	( )	(04)	( )	( )	( )	( )	( )	( )

Year	GRADES											
	1	2	3	4	5	6	7	8	9	10	11	12
☐ 1949	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1950	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1951	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1952	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1953	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1954	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1955	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1956	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1957	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1958	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1959	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1960	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1961	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1962	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1963	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1964	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1965	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1966	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1967	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1968	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1969	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1970	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
☐ 1971	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

00

5. In what form have the data from these tests been collated? (Please check all those which pertain.)

☐ By individual school
☐ By individual school district
☐ By entire state
☐ Other (Please explain):

6. Have annual or other periodical reports been published summarizing the data from these tests?

☐ no
☐ yes (If yes, please specify their nature and location):

7. Have State Department of Education or other studies been conducted and published utilizing the test data?

( ) no
( ) yes (If yes, please specify the titles and location):

8. Would it be valuable for one of our research associates to make an on-the-spot search of the data for relevant information? (Valuable in the sense that such a search would obtain information in addition to that which is already in printed or published form.)

( ) no
( ) yes

Comments:

9. Would it be permissible for one of our research associates to make such an on-the-sport search?

( ) no (If no, please explain):

( ) yes (If yes, please specify any procedures necessary to obtain permission.)

10. Please indicate where test data from 1950 through 1970 are housed:

SOURCE IDENTIFICATION QUESTIONNAIRE

1. Has a city-wide achievement testing program been available to the schools of your district during the 20-year period 1950 through 1970?

   ( ) yes
   ( ) no

2. If so, by whom is it planned and coordinated?

   ( ) Board of Education
   ( ) A local college or university
   ( ) Other agency or institution

   Note: If the second or third box is checked, please give the name and address of the office, department firm, or agency where it is handled:

   ____

   ____

   Also, please give the name of the program director if available:

   ____

3. Has it been and is it now a requirement that all public schools in the district participate in the achievement testing program?

   ( ) yes
   ( ) no (If no, please explain): ______________________________

   ____

   ____

4. The following item has been designed to determine the years and grades in which a particular standardized reading achievement test (either as a separate test or as part of an achievement battery) was administered. First, please check each year in which such tests were given. Second, in the box under the appropriate grade numeral and opposite the appropriate year, place the code number of the test which was given. On the attached sheet, you will find a list of the test names and corresponding code numbers. If the name of the test used does not appear on the list, use the code number "00" and write the name of the test on the blank lines provided at the end of item 4 above.

EXAMPLE:

	GRADES											
Year	1	2	3	4	5	6	7	8	9	10	11	12
( ) 1970	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
(X) 1971	( )	(04)	( )	( )	( )	(04)	( )	( )	( )	(31)	( )	( )
(X) 1972	( )	(04)	( )	(04)	( )	(04)	( )	( )	( )	( )	( )	( )

	GRADES											
Year	1	2	3	4	5	6	7	8	9	10	11	12
( ) 1949	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1950	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1951	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1952	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1953	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1954	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1955	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1956	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1957	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1958	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1959	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1960	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1961	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1962	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1963	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1964	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1965	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1966	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1967	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1968	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1969	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1970	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
( ) 1971	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

00 ____

____

5. In what form have the data from these tests been collated? (Please check all those which pertain.)

   ( ) By individual school
   ( ) By grade level
   ( ) By sex of students
   ( ) Other (Please explain): ____________________

   ____

6. Have annual or other periodical reports been published summarizing the data from these tests?

   ( ) no
   ( ) yes (If yes, please specify their nature and location):

   ____

   ____

   ____

   ____

7. Have State Department of Education or other studies been conducted and published utilizing the test data?

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( ) yes (If yes, please specify the titles and location):

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Comments:

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